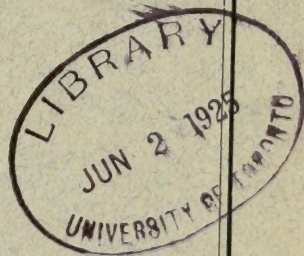


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& Medical
Serials

1924

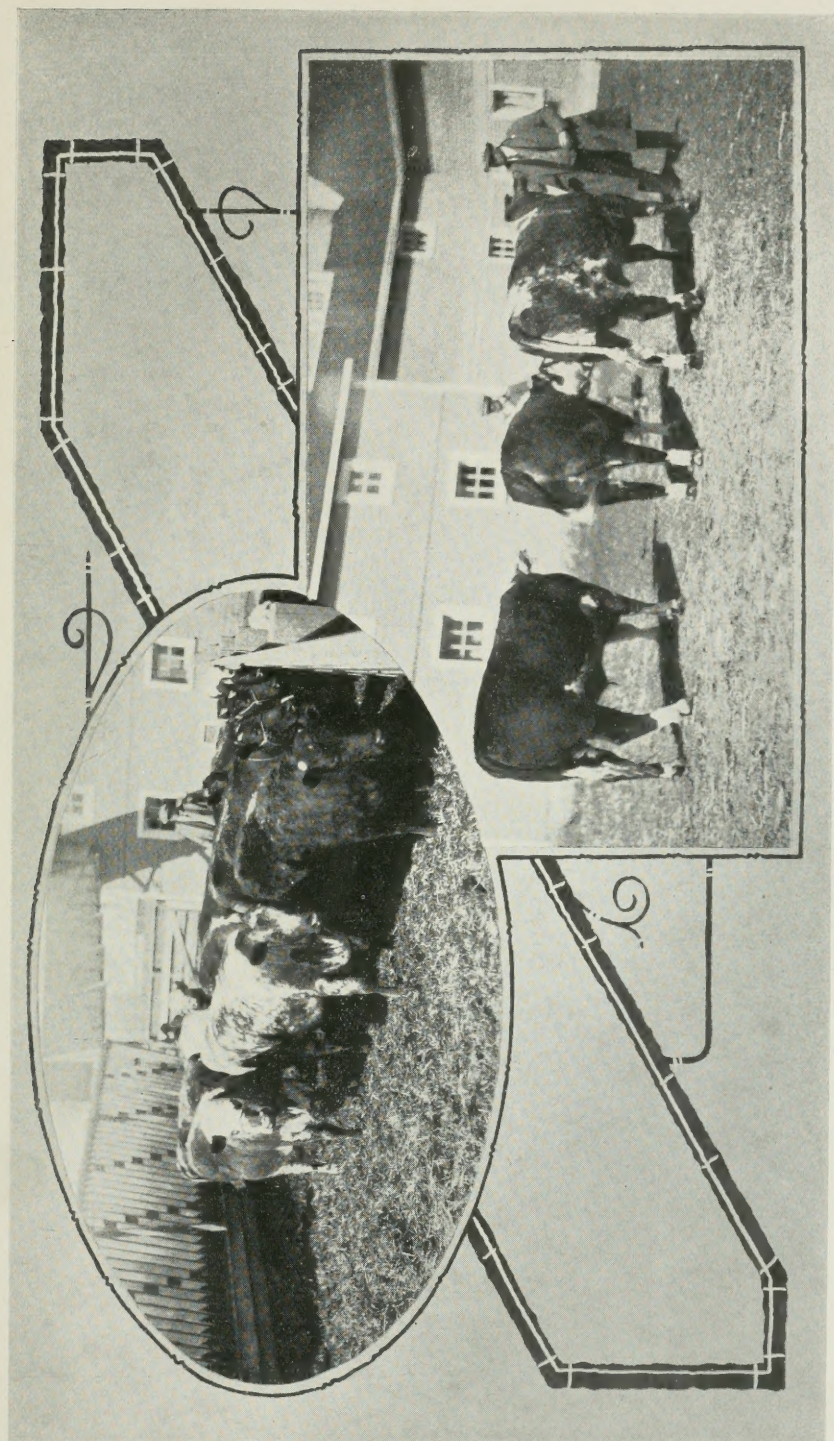
ANNUAL REPORT
OF THE
DEPARTMENT OF AGRICULTURE
OF THE
PROVINCE of ALBERTA
FOR THE YEAR
1924

PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY



EDMONTON:
PRINTED BY J. W. JEFFERY, KING'S PRINTER
1925

ack'd



ALBERTA CATTLE FOR JAPAN

These are some of the Alberta Cattle included in the first shipment to Japan in 1924.

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DEPARTMENT OF AGRICULTURE, EDMONTON.

TO HIS HONOUR

ROBERT GEORGE BRETT,

Lieutenant Governor of the Province of Alberta.

SIR,—

I have the honour to submit herewith the Report of the Department of Agriculture for the year 1924.

I have the honour to be, Sir,

Your obedient servant,

GEORGE HOADLEY,

Minister of Agriculture.

DEPARTMENT OF AGRICULTURE

Heads of Branches

1925

Hon. George Hoadley, Minister of Agriculture.

H. A. Craig, Deputy Minister and Superintendent of Agriculture Schools.

Z. McIlmoyle, Assistant Deputy Minister.

S. G. Carlyle, Live Stock Commissioner, Brand Recorder and Superintendent of Fairs and Institutes.

C. P. Marker, Dairy Commissioner.

P. R. Talbot, V.S., Provincial Veterinarian.

W. J. Stephen, Field Crops Commissioner.

J. H. Hare, Superintendent of Poultry Branch.

D. Douglas, Director of Demonstration Farms.

B. Lawton, Game and Fire Commissioner.

Miss Jessie McMillan, Director of Women's Home Bureau Service.

Colin G. Groff, Publicity Commissioner and Editor of Publications.

Report of the Deputy Minister

HON. GEORGE HOADLEY,
Minister of Agriculture.

SIR,—

I have the honor to submit herewith the Annual Report of the Department of Agriculture for the year 1924.

The year 1924 was, on the whole, a prosperous one for the farmers of Alberta. The south-eastern part of the province experienced a light crop season due to shortage of moisture. The remainder of the province reaped a fairly good crop. General lack of sufficient moisture gave some concern during the early part of July; good rains came later, however, with the result that most of the province had an average yield of grain, and in some scattered districts a heavy crop was harvested. On account of the moisture coming somewhat late a second growth was started in both wheat and oats. This made for uneven ripening with resultant reduction in quality of sample. A good deal of difficulty was experienced in the early part of the threshing period with tough grain. The greatly increased price, however, much more than compensated for the lack of quality. The harvesting period was cut short over a considerable area by an early snow storm. This snow went off sufficiently to enable farmers to harvest and thresh practically all of the season's crop.

Feed is plentiful in most districts, though higher in price than has been the case in some years past, in sympathy with the higher price of wheat and oats. The quality of the feed is perhaps scarcely up to average on account of the nature of the growing season.

Very little feeding of beef cattle is being done, chiefly because of the high price of grain. Farmers were sceptical about the possibility of profit in feeding enterprises even though feeders were going into the feed lots at a comparatively low price in early fall. As the season advances it would appear that those who have undertaken feeding will be reasonably well rewarded for their work, as conditions at the time of writing would indicate that well finished cattle will bring a good price on the spring market. A new feeding enterprise has been established near the stock yards at Edmonton by a company which was organized in the season of 1924. This undertaking has already assumed large proportions. Over 3000 cattle have been on feed. It is the expressed intention of the company to finish these cattle to a point where they will be suitable for export to the British and European markets.

DAIRYING

Dairying has made particularly good progress during the year, the increase in the manufacture of butter amounting to about 5,000,000 lbs., over the previous year. Another significant feature of the dairy industry is—that we have doubled our exports to Great Britain and the Orient. In 1923 about 2,000,000 lbs. were exported while in 1924 this amount had reached 4,000,000 lbs. A considerable proportion of this went by the Western route and Panama Canal to Britain. Shipping by this route is proving very satisfactory and no doubt will take care of the great portion of our exports to Great Britain in years to come. Some highly satisfactory letters have been received from firms handling Alberta butter in Great Britain, stating that the quality is all that could be desired and that in several respects our butter is superior to that coming from elsewhere.

While dairying has made rapid improvement during the past few years in this province, it is evident to those who have made a study of the situation that the greatest weakness now in connection with the industry is the low average production of the dairy cows of the province. Improvement in this direction can be effected most economically and rapidly by the use of pure bred dairy sires on the present foundation stock. It follows, of course, that such sires should be from high-producing ancestry.

Great improvement has been made in the matter of winter feed supply for dairy cattle. There are between 2,500 and 3,000 silos in the province, most of which have been constructed during the past five years. This means that a considerable number of farms have succulent feed for dairy cows which permits of successful winter dairying.

BACON HOGS

The bacon hog industry is not making the progress which we should like to see, in that the number of "select" hogs going to our markets has not materially increased during the past year, and at the present time is very low in comparison with the number of thick smooths and other grades going to market.

The principle of the production of bacon hogs must be admitted to be sound. A consideration of some of the essential facts gives one ample proof of this. The department has been advised that about four hundred thousand more hogs were exported to Great Britain in 1924 than in 1922. Most of these hogs were exported in the form of Wiltshire bacon. There is no doubt that these exports would have been much smaller, in fact would have been practically nil, had Canada not been able to supply this particular grade of product. If these four hundred thousand hogs had been thrown on the Canadian market during the past season it is quite evident that the market for hogs would have been demoralized. It is therefore necessary for us to produce the type of hog which is in demand on the British market if we are going to find a ready outlet for our large surplus product.

There are many conflicting opinions regarding the method which is now being practised to establish the hog industry. It would appear wise that the whole question of method should again come under careful review by all parties interested in establishing this industry. The Department of Agriculture stands ready to lend its best assistance and co-operation in making effective any improvement which can be made in the present system, looking toward the establishment of the business on a more satisfactory basis.

POULTRY

Those engaged in the poultry industry had a very successful season. Prices for eggs were higher than usual owing to a scarcity. Prices for poultry were steady and strong throughout the year, the market for turkeys being particularly favorable. The shortage of grain in the previous year combined with a rather late harvest season placed farmers in a position where they were unable to secure the grain to finish their birds early and resulted in some of the first shipments reaching the market in an unfinished condition. Quite a proportion of our product found its way to the American market, both in the form of live and dressed birds. Every effort should be made to develop this trade, as the Canadian market is a very limited one and does not permit of the possible expansion of the industry unless we have some other outlet which will absorb the surplus in the rush season.

The Poultry and Egg Marketing Service had one of the most profitable seasons since its establishment. A new branch was opened at Lethbridge and gives promise of becoming a substantial market centre.

SEED GRAIN

The registered seed grain business made very satisfactory progress during the year. The Seed Grain Marketing Plant established in Edmonton two years ago enlarged its activities to the extent that it handled about 70,000 bushels of registered seed grain. This service works closely in conjunction with the Alberta Seed Growers' Association, which directs the policy very largely, has expressed itself as being entirely satisfied with the operation of this service. Some of the grain handled by the plant found its way to all the provinces of Canada, to the United States and to Great Britain. This market may be greatly enlarged provided a high quality of grain is produced, and providing that nothing but the very best quality of pure seed with strong vitality and free from weed seeds is offered for sale. In this matter the seed grain marketing service is exercising great care in the hope that a reputation may be built up for Alberta registered seed grain.

SCHOOLS OF AGRICULTURE

Three Schools of Agriculture have been in operation during the year—at Claresholm, Olds and Vermilion. The attendance at Olds and Claresholm has been increased over that of previous

years. The Vermilion School of Agriculture was opened in October for the training of British boys. An agreement was entered into with the Overseas Settlement Board whereby one half of the operating expenses, including interest on capital account, would be paid by this board. The applicants were required to pass inspection of the Canadian emigration authorities in Great Britain as to their physical fitness and as to the suitability to make Canadian settlers. The object of this Government and of the Overseas Settlement Board is to secure young men who are adapted for rural life in Canada, and who, through training in such a school as that at Vermilion and with actual training on farms in Canada, will be able to operate farms on their own account. About 60 boys have entered the course. These are essentially a good type of young Englishmen. They are all anxious to learn methods of farming in this country, and from what can be determined at the present time it would appear that most of these men give prospects of making good farmers and useful citizens.

The course is designed to give them training in the practical side of farming. A few lectures and demonstrations are given each week by the staff of the department. Most of the time, however, is spent by the boys in actually looking after the herd of dairy cattle, the hogs, the poultry, the horses and doing the ordinary things about the farm. Considerable time is spent in the blacksmith and carpentry shops and in connection with gas engines and farm machinery. These boys will be placed with farmers as hired help during the coming summer. The department proposes to keep in close touch with all of them until such time as they are finally located on their own farms. The scheme is entirely new and is naturally being watched with a good deal of interest. The department has gone sufficiently far with it to have confidence in its success. The thing which impresses one most as he comes into close contact with the work is that the majority of these young men would never have any opportunity of finding their way to the business of farming if some such arrangement of this kind were not afforded them.

ORIENTAL MARKET

During the year the department investigated the possibilities of developing a market in the Orient for live stock. A trial shipment of 28 head of live cattle was made in May, which was accompanied by the Deputy Minister of the Department of Agriculture for the province. The shipment consisted of 14 cows and 14 steers, weighing from 1,200 to 1,500 lbs. each. This was the first shipment of Canadian beef cattle which has been made to the Orient and naturally created a great deal of interest amongst certain classes of the Japanese people. All the cattle arrived in first class condition after a journey of 14 days. The animals were slaughtered after passing five days in quarantine, and when hung up looked very much superior to the native beef of Japan and to the imported beef from China. The Japanese expressed themselves as highly satisfied with the quality of the beef and com-

menced negotiations immediately for a second shipment. The investigation proved beyond question that there is a large demand for beef throughout Japan. Beef consumption commenced in this country about 35 years ago and has been steadily increasing. The appetite is growing amongst the people and there is also a campaign of education under way calculated to influence the people to consume more beef and dairy products. One evidence of the desire of the authorities to increase meat consumption is to be found in the fact that the army and navy were rationed with beef for the first time this year.

The difficulty in making export shipments to Japan was found in the charge for ocean space. The trial shipment went forward at a rate of \$100.00 per head including ocean space, stalls and transportation for attendant. Upon representations from the government of this province, after the trial shipment has been made, the Pacific Steamships conference agreed to reduce this rate to \$50.00 per head. A second shipment went forward at this rate. The Government again made representations for a lower rate and the companies agreed to make a further reduction to \$37.50 per head. In order to take care of shipments at all seasons of the year, and particularly shipments when the prices of cattle are high, it is necessary that this rate be slightly further reduced. It is the hope of the Department that it will be made at least \$35.00 or perhaps a little less, and with this object in view the Department has again commenced negotiations with the Steamship Companies operating on the Pacific.

One of the private companies in this province has also made some shipments to Japan during the past season, and they report very favorably upon the undertaking. At the present time the Department has sent a quotation on 200 cattle to a Japanese firm, who requested shipment within the next two months.

It would appear that there is a possibility of developing a substantial market in live cattle provided a duty is not imposed by the Japanese Government, and provided also that the value of the yen remains somewhere near normal, and that the shipping rates can be maintained at, or a little below, their present level.

The Department's representative also investigated the possibility of trade in other Alberta commodities. Connections were made with firms in Japan who are interested in the importation of dressed beef, canned and powdered milk, cheese, wool, timothy seed, wheat and flour. On account of the industrialization of Japan, which is taking place very fast at the present time, and on account of the definite change in the habits and customs of the people who are more and more taking on European ways, there can be no question that there will be a steady and substantial trade developed with the Orient. This will necessarily be slow. Nevertheless one cannot help being impressed with the possibilities of such a market. In view of the present tendencies in the country and considering that there is a population of over 60,000,000 people, one is compelled to feel that trade with this country

is something which deserves our best attention, and that the development of that market is an important factor in the future of our province.

It would appear that the prairie provinces of Western Canada are facing a period of new development. We have passed through, during the last decade, one of the most serious and trying times in our history; it would seem that we have turned the corner and that we are at last in sight of better times. It is evident on every hand that a tide of immigration is commencing to flow to Western Canada. We do not hope or look for the boom days of 1912, but we confidently look forward to the steady substantial development of the great plains section of Western Canada. In this development it is essential that our agriculture be maintained on a sound basis, otherwise no material advancement can be made and reaction is sure to come eventually. Emigrants from United States, Great Britain or elsewhere must find their employment on the land, and if they are going to make contented and useful citizens, they must find there a reasonable degree of prosperity. A duty devolves upon those who are residents of the country to extend to these people every assistance possible in helping them to find themselves in this new country and to become established on a proper basis.

A detailed report of the activities of the various branches of the Department is attached herewith.

Respectfully submitted,

H. A. CRAIG,

Deputy Minister of Agriculture.

Report of the Assistant Deputy Minister

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honor to submit herewith my report on Grasshopper Control Work, and Movement of Settlers from dry areas of the province, and the taking up of second homesteads.

GRASSHOPPER CONTROL WORK

Grasshoppers in unusual numbers made their appearance in Southern Alberta during the year 1918 when we had a dry summer. In this year no serious damage was done to the crop.

In 1919 there was quite a serious outbreak of grasshoppers in the districts about Kipp, Commerce and east of Magrath where considerable damage was done. This combined with the dry season resulted in a partial crop failure in the affected districts which are composed of Municipal Districts Numbers 68 and 69 and Local Improvement District Number 38.

In 1920 there was a considerable increase in the territory infested. This now comprised Municipal Districts Numbers 39, 40, 69, 70, 94, 98, 99, 129, 159, 189, 190 and Local Improvement Districts Numbers 7, 8, 9, 10, 37, 38, 67, 68, 100, 130, 160, 218, 219, 220, also a small area at High Prairie in Northern Alberta. There were fair crops in the area infested. It was estimated that a loss of approximately 25 per cent. of the crop in this area was caused by grasshoppers. Considerable poisoning was done by individuals and in some cases the council of the Municipal Districts supplied poison material to resident farmers, but there was no general control campaign. Poison material was purchased by the Provincial Government and supplied to the Municipal Districts and individuals at cost, \$16,318.38 was expended on this work.

In 1921 the infested area extended north as far as township 32.

Supplies of poison material were purchased by the Department and distributed from Calgary and Lethbridge. The staffs of the Provincial Schools of Agriculture at Olds, Youngstown, Gleichen, Claresholm and Raymond undertook educational and control work in territories tributary to each school and gave valuable assistance in distributing supplies and organizing these districts. Serious loss of crop occurred in some districts owing to drought and grasshoppers and there was a general spread of infestation during the latter part of the summer, as in the districts affected the farmers stopped control work when they found that their crops were going to be a failure owing to drought.

The Department expended \$75,026.15 on this work. Bulletins were issued on grasshopper control and on construction of bait mixing machines, and the Government paid the cost of administration.

In 1922 the Government decided to put on a comprehensive control campaign covering all the infested territory which now extended as far north as township 46. It was evident that serious crop losses would occur if this pest were not checked. The infested area consisted of 96 Municipal Districts and 48 Local Improvement Districts, constituting an area of 29,859,840 acres, which was divided into 22 control areas. An agent of the Department was placed in charge of each area which consisted of from 6 to 8 Municipal Districts or Local Improvement Districts. Meetings were held by these agents throughout their districts in the early part of the season. The municipal councils arranged for the opening of mixing stations and engaged men to operate these stations and paid all the cost in connection with this part of the work. In Local Improvement Districts the agent of the Department arranged for local organizations to handle the control work in each township and for the establishing of mixing stations also engaged the men necessary to operate these stations. During the season these agents exercised general supervision of all mixing stations and where necessary enforced the provisions of The Pest Act which had been passed by the Legislature this year. Distributing centres for material were established at Edmonton, Calgary, Munson, Lethbridge and Medicine Hat, and supplies of arsenic, bran, molasses, salt and sawdust were secured before the opening of the campaign. Provision was made for a supply of mixing machines which were delivered to Municipal Districts and Local Improvement Districts at cost price. These machines were operated by gas engines and it was found that with these machines bait could be mixed much cheaper and more thoroughly and there was less danger from arsenic poisoning than where bait was mixed with shovels.

Poison material was supplied by the Government at one-half the cost price and the Government paid local freight on shipments from distributing centres, also the cost of administration, stationery, bulletins, etc.

Two hundred mixing stations were put in operation, 134 of which were in Municipal Districts and 66 in Local Improvement Districts.

Professor Strickland, who had been employed for a number of years by the Dominion Government as entomologist at Lethbridge, was appointed early in the year as Professor of Entomology at the University of Alberta. Professor Strickland devoted all of his time to the direction of the field work of the grasshopper control campaign and as a result of experiments carried on by him in the early part of the season we were able to cut down considerably on the cost of bait which was used this year. The mixture used was as follows:

Bran	.50 pounds
Sawdust	.50 pounds
Molasses	1/2 to 1 gallon
Salt	.5 pounds
Water	10 to 12 gallons
Arsenic	.5 pounds

This mixture was found to be very effective and much cheaper than the bait used in previous years. In this year the Government expended on grasshopper control work \$512,253.49. The following material was used:

Molasses	.533 tons
Arsenic and Paris Green	.520 tons
Bran	.477 tons
Sawdust	.5521 tons
Salt	.503 tons
Amylacede	.102 gallons

Allowing for material on hand and accounts held against Municipal Districts and Local Improvement Districts for their share of the cost of the campaign, the net cost to the Government in this year was \$195,748.48.

A questionnaire was sent out to the secretaries of the Municipal Districts and to the secretaries of the United Farmers Associations and other organizations in the Local Improvement Districts and replies to this questionnaire indicated the saving of crop amounted to approximately \$17,500,000.00 as a result of this year's campaign. In addition to this the spread of the pest to other districts was prevented. In many districts a complete clean-up was made, so that in a large number of districts affected in 1922 it was not necessary to carry on a campaign in 1923. It was estimated that crops to the value of \$1,518,813.00 were destroyed by grasshoppers in 1922.

Late in the season of 1922 reports were received from Peace River and Grande Prairie of outbreaks in these districts. Supplies were forwarded and experienced men sent north to assist in the control work. It was found difficult to organize effective campaigns so late in the season, but meetings were held and whatever possible done to prevent further damage to the crops which had already suffered to considerable extent in some parts of the Grande Prairie District.

During this year we had valuable assistance from the staffs of the Schools of Agriculture and from Professor Seamans, Dominion Entomologist at Lethbridge. We had splendid co-operation from the secretaries of the Municipal Districts, officials of the U.F.A. and other farmers' organizations as well as individual farmers all over the infested area. The C.P.R. and C.N.R. officials established mixing stations and arranged for poisoning along their lines and carried out whatever work was necessary. We also received the best of service from the railway companies in forwarding supplies and material to the different districts.

The Natural Resources Department of the C.P.R. under the direction of Mr. G. H. Hutton, gave us very great assistance in looking after the large areas of land owned by this company and in every case where their land was reported as infested with grasshoppers we were authorized to arrange for control work at their expense.

The whole of the area concerned was infested with Roadside Grasshoppers (*Camnula Pellucida*) but in districts south of the main line on the C.P.R. there were considerable numbers of the Lesser Migratory Grasshopper (*Melanoplus Atlantis*) and of the Two-Striped Grasshopper (*Melanoplus Bivittatus*).

During July and August constant flights of the Lesser Migratory Grasshopper were observed in the southern part of the province which appeared to have originated in Montana and which caused considerable infestation in districts where this year's campaign had practically cleared up the grasshopper. As a result of these flights poisoning had to be carried on quite late in the season to prevent damage to crops and to prevent re-infestation as far as possible.

In 1923 it was found that the area infested was considerably cut down and confined largely to the district east of range 23 and south of the C.P.R. Calgary-Empress line. Quite a number of mixing stations were operated north of this line of the C.P.R. as far as Red Deer and extending from Red Deer to the eastern boundary of the province, but work in this district was largely that of clearing up isolated outbreaks and there was no general campaign as that carried on in 1922.

In the district south of the C.P.R. Calgary-Empress line the situation was serious and a very energetic campaign was necessary to save the crop. In this year very little material was distributed from Edmonton, Munson or Calgary but the distributing centres at Lethbridge and Medicine Hat had a very busy season.

Seventy-five mixing stations were operated in 28 Municipal Districts and 65 mixing stations in 36 Local Improvement Districts. The total expenditure by the Government amounted to \$213,800.21. We have accounts against Municipal Districts and Local Improvement Districts to the amount of \$103,997.55 for their share of the cost of this year's campaign which would leave the net cost to the Government at \$109,902.66.

Returns received from municipal secretaries, U.F.A. secretaries and our field agents show that in this year there was a direct saving of crop amounting to approximately \$4,655,560.00 as a result of the grasshopper control work.

It would appear that a great deal of control work that was necessary this year in the south-eastern part of the province was caused by the flights of Lesser Migratory grasshoppers from Montana in the fall of 1922. In July of 1923 Professor Strickland and Mr. A. W. Murphy, of this Department, visited Montana going

south from Medicine Hat by car and crossing the boundary at the west side of range 3, entering Hill County. It was found that a great many farms had been deserted and that no organized campaign had been carried on in this County in 1922 and 1923. Farmers had tried to save their crops by putting out poison about their fields of grain. The County authorities gave out 200 lbs. of mixed bait per half section and charged \$1.00 per 100 lbs. for all further requirements of bait. Very few farmers were in a position to pay for bait, with the result that crops were destroyed over large areas of the Counties of Hill and Liberty. It was estimated that in these two Counties 500 square miles of country, 25 per cent. of which was in crop had been devastated by this pest. After the crops had been cleaned up in these districts the grasshoppers migrated westward and north. In Liberty County, in 1922, some poisoning had been carried on, but only about crop land and no effort was made to destroy the grasshoppers on vacant land with the result that the 1922 crop was badly damaged and in 1923 it was found impossible to control this pest and crops over large areas were totally destroyed.

Professor Strickland reported that his observations in Montana where conditions in 1922 were similar to conditions in Alberta, showed clearly that if an energetic campaign had not been carried on in Alberta in 1922 and 1923 we should have suffered heavy crop losses in 1922 and the great crop which was secured in 1923 would have been impossible.

After correspondence with Professor Cooley, State Entomologist of Montana, and Professor Lockwood, Federal Entomologist, in charge of Western States, a conference was arranged to be held at Great Falls in the latter part of August, 1923, with a view to co-operation between Alberta and Montana in controlling the grasshopper pest. This conference was attended by state officials, representatives of the Federal Government, representatives of banks, railways, farming and ranching interests and county agents from practically all the North Western States.

Alberta was represented by Mr. W. H. Fairfields, Superintendent of the Lethbridge Experimental Farm; H. Seamans, Dominion Entomologist; Professor Strickland, of the University of Alberta, and myself. As a result of this conference plans were laid for a comprehensive control campaign in Montana in 1924. Federal assistance was asked for and state officials, county authorities, bankers, railway officials and business men all promised support. This conference was important from the standpoint of Alberta, as we could not hope to control the grasshopper pest until Montana put on an effective campaign. We had hopes that our work with grasshoppers would be completed in this year but found in the late summer that large numbers of grasshoppers were moving in Southern Alberta, apparently coming from Montana. This made it necessary to continue poisoning until late in the season to save our crops and to prevent egg-laying as far as it was possible.

In 1923 in the Grande Prairie country three mixing stations were operated, one at Lake Saskatoon, supplying M.D. 740, one

at Sexsmith, supplying Local Improvement Districts 770, 771, 800 and Municipal District 739; one at Hythe, supplying Local Improvement Districts 741, 771, 772 and part of 800. It was found difficult to get the right kind of co-operation in all the districts concerned, and when the rains commenced, early in July, there was a general slackening off in control work, with the results that there was a serious re-infestation and an energetic campaign made necessary in 1924.

In 1924 the weather was very dry in the early part of the summer with the result that grasshoppers commenced hatching about the 15th of May. The territory affected was much smaller than in 1923, being confined largely to the south-eastern portion of the province. The most serious outbreak occurred east of Lethbridge with scattered outbreaks near Lethbridge and along the C.P.R. line near Enchant, Brooks, Tilley, Duchess, Cavendish, Patricia, Atlee and Bindloss, also along the C.N.R. lines at Rockford, Three Hills, Youngstown, Sibbald and Carbon on the C.P.R.

We had considerable success in some districts this year in burning off infested land where weeds in previous years had been heavy. This work was carried on wherever possible, with the result that control work later on in these districts was much easier to handle.

We found we had ample supplies of material on hand from 1923 with the exception of bran and sawdust.

Twenty-eight mixing stations were operated in the 14 Local Improvement Districts affected and 11 mixing stations were operated in 12 Municipal Districts where outbreaks occurred. The districts in the south-eastern part of the province put on an energetic campaign in the early part of the summer. It appeared there would be good crops in this territory, but unfortunately the later season was dry and this caused almost a complete crop failure in this part of the province.

It is not anticipated that control work will be necessary in 1925 in this territory unless, perhaps, in isolated cases.

In the Peace River and Grande Prairie Districts there was a considerable increase in the territory infested as compared with 1923.

Mr. A. R. Judson, District Agriculturist, stationed at Grande Prairie took charge of the control work and gave valuable assistance to the districts concerned. Grasshoppers commenced hatching about the middle of May.

Serious outbreaks occurred in Municipal Districts 739 and 740 also in Local Improvement Districts 741, 770, 771 and 772. The Department operated mixing stations in these Local Improvement Districts and Municipal District 740 operated a mixing station at Lake Saskatoon. This Municipal District did good work, but Municipal District 739 did not open a mixing station. Some mixed bait was secured by this Municipality from the station at

Lake Saskatoon and Sexsmith but more effective work could have been carried on if this Municipality had operated a mixing station at Grande Prairie. The most serious conditions were found in Hythe, Valhalla and Buffalo Lake district. In these districts control work was not started early enough by the farmers with the result that considerable crop was lost that might have been saved if work had been started earlier.

About the middle of June we had reports from the secretaries of Municipal Districts 857 and 858 North of Peace River, that grasshoppers were doing serious damage. Supplies of poison material and mixing machines were forwarded and Mr. Judson visited these districts and assisted in organization work. Later on an outbreak was reported north of Peace River in Local Improvement Districts 837 and 826. Arrangements were made for supplies of bait for these districts. These districts north of the Peace River were too late in the season in starting control work, with the result that considerable crop was lost.

In July an outbreak was reported in Municipal District 829 at Spirit River. Mixed bait was supplied to this Municipality from the mixing station at Sexsmith and everything possible done to assist farmers in saving their crops.

The dry season in all this north country was favorable to the development of the grasshoppers and a well organized effort will be necessary in 1925 to save the crop in these districts especially if we should have dry weather in the early part of the summer.

It has been difficult to make the people in this north country realize the seriousness of the grasshopper invasion, but crop losses incurred in these last two years have shown the necessity of control work, and we expect better co-operation from these people in 1925. During the year \$28,014.79 was expended on grasshopper control work by the Government.

The total expenditure covering grasshopper control work in the five years, from 1920 to 1924 inclusive, was as follows:

1920	\$ 16,318.38
1921	75,026.15
1922	512,255.49
1923	213,800.21
1924	28,014.79
	\$ 845,413.02

The following amounts have been collected from Municipalities and Local Improvement Districts and from sales of material:

1921	\$ 50,134.56
1922	14,538.78
1923	179,798.85
1924	108,771.30
	\$ 353,243.49

We have outstanding accounts against Municipalities and Local Improvement Districts as follows:

1922	\$32,181.12
1923	39,561.19
1924	14,352.13
	\$ 86,094.44

SUMMARY

Collected	\$353,243.49
Accounts outstanding	86,094.44
Material on hand (estimated)	60,060.00
	\$499,337.93

This makes the net cost to the Government for the grasshopper control campaigns for the period of five years \$346,075.09. Returns from questionnaires show a saving of crop in the two years 1922-23 amounting to over \$22,000,000.

MOVEMENT OF SETTLERS

In the latter part of the summer of 1922, owing to the crop failures in the south-eastern parts of the province, requests were received from a large number of farmers for assistance in moving from these districts to other districts where they thought they would have a better chance of making a success of farming. Owing to repeated crop failures these men were not in a position to pay the cost of moving their stock and effects.

After considerable correspondence an agreement was made with the Dominion Government, the C.P.R., the C.N.R. and the Provincial Government whereby settlers living in dry districts would be given free shipment to other districts. Under this agreement the railway companies accepted each shipment at two-thirds of the regular freight rate. Accounts for freight at these rates were forwarded to the Provincial Government and payment made. The Dominion Government was then billed by the Provincial Government for its one-third share of this freight.

The Provincial Government issued the application forms and investigated each case and where application was approved certificates were issued and the railway company notified of same. Shipment was made by the railway company on presentation of these certificates.

Similar arrangements were made by the Government of Saskatchewan and under this arrangement shipping certificates were issued to settlers who wished to move from Alberta to Saskatchewan and vice versa. Shipments were made under the Settlers' Effects regulation of the railway company, which permitted mixed cars of machinery, household furniture and stock to the number of ten head in each car. Not more than two cars were allowed to a settler.

One hundred and forty-three settlers with 217 cars settlers' effects were moved to Alberta points and 101 settlers with 159

cars of settlers' effects were moved to Saskatchewan points. The cost to the Provincial Government was \$10,000.00 or approximately \$41.00 per settler moved. Nearly all the settlers moving to Saskatchewan secured their new locations in the north central part of that province.

Practically all the settlers moving to Alberta points secured their new locations north of Calgary.

One hundred and sixty-six settlers were moved off the C.N.R. lines and 78 off the C.P.R. lines. Free shipment was continued until June 10, 1923, when the agreement with the railway companies was cancelled. Many of these settlers took advantage of the provision made in the amendment to the Dominion Lands Act in 1923, which permitted them to take up a second homestead. Reports show that most of these settlers are doing very well in their new locations.

In the latter part of August, 1924, after making a survey of the dry areas and on receipt of a large number of requests for assistance in moving, a new agreement was made between the Dominion Government, the railway companies and the Provincial Government, for the movement of settlers from the districts where crops had been a failure in this year.

The terms of this agreement were the same as in 1922 and 1923 except that provisions were made for the free movement of the families of settlers who were being given free shipment. No provision was made for movement of settlers to points outside the Province of Alberta.

From the completion of this agreement until December 31st, 1924, certificates were issued to 417 settlers covering free shipment of 726 car loads of settlers' effects, 337 of these settlers with 590 cars of effects moved off C.P.R. lines and 80 settlers with 136 cars of effects moved off C.N.R. lines. Transportation was issued to 297 families including 755 individuals. These figures do not include children under the age of five years or the settlers who traveled with the car loads of stock and effects in each case. During this period to the end of 1924 the movement of settlers differed from that in 1922 and 1923 in that quite a large number of these settlers secured their new locations in irrigated districts and in the districts south of Calgary along the Calgary-Macleod and Aldersyde-Lethbridge lines of the C.P.R. and in the Pincher Creek, Raymond and Cardston districts. In every case settlers were required to decide where they wished to make their new homes and no influence was used to induce settlers to go to any particular district. If the settler decided to go to an irrigated district he was given every opportunity to do so. Quite a number moved into the Lethbridge Northern Irrigation district and into the United Irrigation District, also into the C.P.R. Irrigation District.

It is expected that there will be a large movement during the remainder of the winter and during the coming spring.

SECOND HOMESTEADS

On May 9th, 1923, Order-in-Council was passed at Ottawa. P.C. No. 818, making provision for the granting of one quarter section as a second homestead to settlers who, owing to drought conditions, had lost their original homesteads.

The provisions of this Order-in-Council apply to what is known as the pre-emption and purchased homestead area of the province lying south of the south boundary of Township (31) as defined by the Dominion Lands Act of 1908.

A settler applying for the benefits to be derived under this Order in Council, is required to divest himself of title to all his real property in the tract defined and to furnish a certificate from the Government of the province to the effect that he is qualified to benefit under this Order-in-Council.

In pursuance of this, we have issued certificates to eighty-four settlers. In most cases these certificates were issued to settlers who were assisted in moving from the dry districts under the special arrangement with the Dominion Government and the railway companies. Some of these men have secured their second homesteads in Northern Saskatchewan, but the majority are securing their new locations in this province.

Respectfully submitted,

Z. McILMOYLE,

Assistant Deputy Minister.

Report of the Live Stock Commissioner and District Agriculturists

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honor to present herewith the report of the Live Stock Branch for the year 1924.

I am pleased to state that there is a feeling of optimism among live stock men, which has not existed for some years back. Prices are considerably better for all classes of stock of good quality, if in good condition, and a still stronger market is anticipated. Stock that are thin and in poor condition, even if well bred, are bringing very low prices.

HORSES

There is a stronger tone in the horse market and approximately twelve thousand have been shipped out of the province this year. While the prices have not been high the demand has been active. The farm chunk weighing from 1,200 to 1,400 pounds is selling below value, but the good, big, draft horse is being picked up at good prices. Eighteen to twenty hundred pound geldings selling as high as \$300.00 off the farms, provided they are of good conformation, and any farmers who have horses of this type and will take the trouble to break them will get remunerative prices. It may be some little time before a higher price will be paid for the 1,400 and 1,500 pound horse, but values are steadily coming back.

There is a revived interest in horse breeding. In 1923 some four or five horses were clubbed and it is fully expected that a larger number will be clubbed this year, and it will not be long before more good stallions will be needed. Farmers are finding it more economical to work their land with horses than with tractors, and while there is still a place for the tractor on the large farm it will only be used in conjunction with horses.

There are still a large number of small horses, which was shown by the roundups held in various parts of the province, but there are also a lot of good horses on the range.

While the light driving horse is not likely to come back, the automobile having taken its place, there is a splendid demand for the breedy, well broken saddle horse and this is now selling for the highest price on the market. The Dominion Government thoroughbred horses in the Millarville and Black Diamond districts are being well patronized by the farmers and ranchers, and we expect an increase in the number of good remount and saddle horses raised in that part of the province.

BEEF CATTLE

The season of 1923-24 proved a profitable one to the feeder of beef cattle. Feed was plentiful, grain was low in price, as were also the cattle purchased on the stock yards. The winter was mild and selling prices in the spring quite satisfactory. In the season 1924-1925 considerable fewer cattle have been fed by the farmers, owing to the limited amount of feed in a great many districts and also to the high price of grain. However this shortage will largely be made up in the Edmonton district by the Edmonton Feeding Company. This company fed some four hundred to five hundred steers during the season of 1923 and 1924. The enterprise proved profitable, so that they have gone into it in a much larger way, and are keeping on feed from 2,000 to 2,500 head of cattle, adjacent to the Edmonton Stock Yards. The finished cattle are being constantly shipped out; feeders brought in to replace them, so that as far as the Edmonton district is concerned, perhaps more cattle will be fed than in the season of 1923 and 1924. In the Calgary district fewer cattle are on feed, but there are a number of farmers in the province and the number is increasing, who are making it a part of their farming system to feed cattle during the winter months.

The ranchers and the farmers who are raising cattle are not finding the business as profitable as the feeder is, and owing to the high tariff which prevents our cattle going across the line to the United States farmer, the market for stockers and feeders is lower than the cost of production. During the war and since that time overhead and operation expenses have increased while the price of this kind of cattle has drifted back to pre-war prices, so that if these cattle do not sell for a better price or the rancher cannot find some way to finish a proportion of these cattle himself, the cattle-raising industry will receive a setback. The Stocker and Feeder Show at Calgary is doing a great deal to bring the cattle grower and the cattle feeder together. Uniform carloads are got together and it is fully expected that this will develop into a great sale in the near future. Following is a summary of the prize winners at the show held in 1924:

First prize, Shorthorn carload, two years old, owner Usher Bros., sold to Edmonton Feeder Co. for \$6.00 per cwt.

First prize, Shorthorn carload, one year old, owner F. V. Bennis, sold to the C.P.R. for \$5.90.

First prize, Shorthorn group, two years old, owner J. A. W. Martin, sold to Mr. Mackie, for \$4.75.

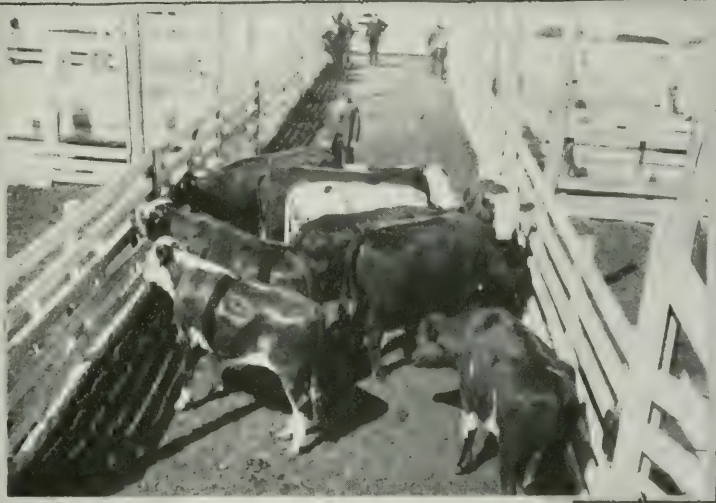
First prize, Shorthorn group, one year old, owner H. S. Parker, sold to Mr. Speers, for \$3.80.

First prize, Hereford carload, two years old, owner J. S. Butler, sold to Mr. Collicutt, for \$5.75.

First prize, Hereford carload, one year old, owner D. Hardwick, sold to P. Burns, for \$5.65.

First prize, Hereford group, two years old, owner Mrs. Robertson, sold to Massie Bros. for \$5.40.

ALBERTA STOCK FOR WORLD'S MARKETS



Top and Bottom Views are of Winter-fed Steers shipped from Grande Prairie, northwest of Edmonton, for export abroad. Centre View is of Feeding Lot of Alberta Livestock Producers, Ltd., at Edmonton, who made large shipments abroad in 1924.

SUMMER CATTLE SALE, MAY 29TH AND 30TH, 1924

Entered		Average
50 Shorthorns, sold for	\$ 4,435.00	\$ 88.70
64 Herefords, sold for	5,257.50	82.15
1 Aberdeen-Angus, sold for	35.00	35.00
115	\$ 9,727.50	\$ 84.60

FALL STOCK SALE, NOV. 4TH TO 7TH, 1924 (CATTLE)

		Average
29 Shorthorn females, sold for	\$ 1,615.00	\$ 55.70
25 Hereford females, sold for	870.00	34.80
18 Aberdeen-Angus females, sold for	890.00	49.45
3 Shorthorn males, sold for	195.00	65.00
20 Holstein females, sold for	2,125.00	106.25
4 Holstein males, sold for	180.00	45.00
16 Grade cows and heifers, sold for	965.00	60.31
113	\$ 6,840.00	\$ 60.44

SWINE SALE, NOV. 6TH TO 9TH

		Average
2 Duroc Jersey boars, sold for	\$ 40.00	\$ 20.00
7 Yorkshire females, sold for	105.00	15.00
9 Yorkshire boars, sold for	211.00	23.44
8 Berkshire females, sold for	130.00	16.25
10 Berkshire boars, sold for	198.00	19.80
36	\$ 684.00	\$ 19.00

SHEEP SALE, NOV. 6TH TO 19TH

		Average
32 Oxford ewes, sold for	\$ 532.00	\$ 16.62
81 Oxford rams, sold for	2,314.00	28.57
12 Shropshire ewes, sold for	378.00	31.50
49 Shropshire rams, sold for	1,484.00	30.28
22 Suffolk rams, sold for	752.00	34.18
2 Rambouillet rams, sold for	56.00	28.00
198 Purebreds, sold for	\$ 5,516.00	\$ 27.86
48 Grade ewes, sold for	466.00	9.71

LACOMBE SHEEP SALE, OCTOBER 9TH

		Average
965 Grade ewes, sold for	\$ 11,880.75	\$ 12.30
225 Grade lambs, sold for	2,088.50	9.28
27 Oxford ewes		21.60
14 Oxford lambs		14.27
36 Rams, sold for	1,287.50	36.00

DAIRY CATTLE

The dairy industry is increasing in this province very fast, with the result that there is a strong demand for good dairy cattle, and we find that farmers are anxious to improve this class of stock. Dairy bulls and dual purposes bulls are in an increasing demand, as are also good dairy cows, and the dairy herds in the province are being greatly improved. More attention is being paid to the care and feeding of these cattle, which has resulted in a greater production, and there is no doubt that there will be a steady increase in the numbers of dairy cattle, and also an improvement in quality, if better feeding practices are followed, and more comfortable quarters provided.

SHEEP

The sheep industry is perhaps in a more satisfactory position than that of any other class of stock. Prices of wool and mutton have been steadily going up for the past two years, and the demand for breeding stock has been so keen that there was not enough in the province to supply the demand, and some fourteen thousand breeding ewes were brought in from the United States, chiefly Montana. There is also a demand for a large number of Rambouillet rams for the ranchers and breeders in the southern part of the province, and Mr. S. G. Freeborn of the Sheep and Swine Division of the Dominion Live Stock Branch brought in from the United States some 800 breeding rams. There is room in this province for hundreds of thousands more sheep, as there is no class of animal that gives better returns for the money invested. There is scarcely a farmer in the province, but can keep a few sheep to advantage, to pick up the waste and eat the weeds around the farm.

The feeding of lambs has become quite an important industry, especially in the southern part of the province; and in the irrigated districts, which are adjacent to the sheep area, it will become an important side line. Fewer lambs, however, were being fed in the fall of 1924 chiefly on account of high prices, but those who did feed, will likely have a good margin, as the prices will in all probability be exceedingly high in the spring of 1925. There is every probability also in the substantial increase in the price of wool as all supplies which were on hand at the end of the war have now been used up, and there is no surplus, so that from a standpoint of both wool and mutton the future looks exceedingly bright.

HOGS

There has been a large increase in the production of hogs during the year, and also some improvement in the quality of our hogs, due no doubt to a great many of the farmers making an effort to get the select bacon grade and the price that goes with it. While some progress has been made and a larger per cent. increase in this province, than in the other prairie provinces, of select bacon hogs, still the number of select bacon hogs produced in this province is disappointingly low. A great many of the farmers are somewhat discouraged trying to produce this hog. A reaction has set in in some districts and the demand for boars of the bacon breed has decreased while there has been a more active demand for boars of the Duroc Jersey and Berkshire breeds. Prices have been good throughout the year with the exception of the latter part of October and the first part of November when they dropped to rather low levels, but towards the end of the year they revived.

Owing to the high price of grain a large number of breeding sows were placed on the market, most farmers reducing their

breeding hogs and some went out of hogs altogether. While a man is justified in reducing his breeding stock to a point to correspond with the amount of feed he has, we feel it is a mistake to go out of the business altogether because everything points to a great shortage of hogs in 1925, and prices will no doubt be higher than any time since the end of the war. While the number of hogs has not decreased, still towards the end of the year there was quite a decrease in pork production, due to the large number of light hogs being placed on the market. It is a big loss to have these light hogs slaughtered because little use can be made of a pig of this kind in the packing plant, and every farmer should aim to finish his hogs before placing them on the market.

REPORT OF GIRLS AND BOYS' CLUBS

Mr. L. T. Chapman who had charge of this work during 1923 resigned from this position in June of 1924 to become Live Stock assistant at the Lacombe Experimental Farm. We deeply regret the loss of Mr. Chapman's services, as he was doing good work. No one has as yet been appointed in his place, so that the work has been carried on by the staff of the Live Stock Branch, without anyone being able to give it particular attention. Fourteen pig clubs were organized. Two new clubs were formed in addition to those in 1923. A Yorkshire club was formed by District Representative, Mr. Newcombe, in the Vegreville district, and another by Mr. Judson in the Grande Prairie district.

The Agricultural Branch of the Canadian Pacific Railway and the Canadian National Railway both asked our assistance in the training of teams among our Swine Club members along their different lines of railway. Teams were trained from eleven of these clubs. Six carloads of hogs were also shipped in for the carload competition. The winning team under the Railway competitions was to be given a free trip to the Royal Fair at Toronto, where they entered into competition with the other prairie provinces. I am very glad to state that the Vegreville team trained by Mr. Newcombe, not only carried off the cup and medals offered by the Canadian Pacific Railway, but also won the trip to the Royal at Toronto, and in the competition at Toronto won over the other provinces and made a splendid impression. The names of the boys in this team are Albert Jones and Peter Wyllie, and great credit is due Mr. Newcombe for the training of these boys. Below is a summary of the standing of the teams and also the standing of the carload competitions:

STANDING OF THE TEAMS

- | | |
|---------------|----------------|
| 1. Vegreville | 6. Sedgewick |
| 2. Alliance | 7. Sturgeon |
| 3. Hardisty | 8. Killam |
| 4. Czar | 9. Battle Bend |
| 5. Olds | 10. Red Deer |

CAR-LOT COMPETITION

- | | |
|-------------------|---------------|
| 1. Sturgeon | 4. Vegreville |
| 2. Alliance | 5. Hardisty |
| 3. Grande Prairie | 6. Olds |

In October of this year under the direction of the Minister of Agriculture rules and regulations were drawn up for the formation of Lamb Feeding Clubs. Only one club, however, was formed and that one was organized by Mr. Scott, District Agriculturist at Sedgewick. This club was organized in the Camrose district, and next year we expect to see a large number of lamb clubs formed throughout different parts of the province.

Respectfully submitted,

S. G. CARLYLE,
Livestock Commissioner.

REPORT OF JAMES MURRAY, DISTRICT AGRICULTURIST.
MEDICINE HAT

S. G. CARLYLE,
Livestock Commissioner.

SIR,—

I have the honour to submit herewith a brief Report of my work for the year of 1924.

SEASON

The crop of 1924 in South-Eastern Alberta was probably the poorest that has been harvested since the country was settled. There was no rain in the fall of 1923, practically no snow during the winter and no rain in the spring to be of value to a growing crop. There was good germination on well prepared land except in some cases where the soil was very heavy. May and June were dry and cool and in many districts grain crops made excellent progress during this time. Where there was no reserve of moisture the crops began to fail early in June but generally the outlook was promising until the first of July.

With the first of July there was radical change in the weather. It turned very warm, and during the first ten days of the month the temperature was over ninety every day and on several days over one hundred. This intense heat was accompanied by high winds and the combination wrought the destruction of thousands of acres of grain that promised well at the end of June. From the tenth of July the heat moderated but in many districts there was little rain until August and many grain crops dried up so completely that they did not even furnish any feed.

In late July and early August rains were fairly general and abundant. They were too late to help most crops but those that had hung on and were not already ripe, filled well. To most of

the grain crops that could be cut the rain did more harm than good in that it stimulated a rapid growth of weeds which soon overtopped the grain. Binders could be used for harvesting only a small proportion of the crop, but where they were used the weeds were cut with the wheat, and being stacked with it, induced heating and spoiling in the stacks. This lowered the grade and in some cases was so serious as to make the grain unmarketable.

The late rains were beneficial in that by furnishing a rank growth of weeds—particularly Russian thistle—they helped out the supply of feed. When the ordinary feed crops are plentiful Russian thistle is not highly valued, but in years of scarcity it is not to be despised as it has been the means when cut at the proper time and well cured of pulling many a herd through the winter. The rains came too late to materially benefit the pasture but they did add some moisture to the well worked summerfallows.

There is less good summerfallow in the southern part of the district than usual. Where it was not disked in the spring or early summer it was so thoroughly dried out in June by the growth of weeds that it was difficult to plow. When the crop dried up in July many farmers became discouraged and did not pay much attention to the preparation of land for next year's crop. North of township 20 there is about the usual amount of land ready for crop.

FEED SHORTAGE

In many districts there is a serious shortage of feed for stock. When this condition appeared inevitable many farmers disposed of much of their young stock at whatever price they could secure, retaining only their cows and the most promising young stuff. In spite of this, with a severe winter the feed shortage is serious and widespread. The production from milch cows is lower than usual—a serious condition for many families who have been depending mainly on this source of revenue.

SETTLERS MOVING

During the last four months of the year a large number of farmers have left this part of the province for other farms further west and north, where there is less uncertainty about crops. Many of these men have made application for their transportation through this office.

SUMMERFALLOW DEMONSTRATIONS

In 1923 about a dozen men in different districts undertook to co-operate in trying out three methods of summerfallowing. One method provided for double disking the land in the spring, plowing in June and keeping it free from weed growth during the season. By the second method the cultivator was used throughout the season instead of plowing, as this has been highly recommended as being cheaper and more efficient than other

methods. The third method called for the land being plowed in late June or July after there was a considerable growth of weeds.

It was found difficult to have those co-operating to put the third method into operation as they were confident that the results would be unsatisfactory. The season of 1923 was not one that favored the cultivator method as the frequent rains in June made it difficult to kill the weeds even after they had been uprooted by the cultivator. As a result most of those who started the season with the intention of using the cultivator only, had to resort to plowing after the cultivator had been used several times. As there were good rains after the land was plowed the fallow was firm and fairly well stored with moisture.

The season of 1924 was so exceedingly dry and hot during the growing season that even many good summerfallows produced very little crop. The results of the tests were therefore almost negative. Reports that were secured showed no market difference in yield from the land that was plowed after disking and that which was kept cultivated during the summer without plowing. Several years observation of methods of summerfallowing lead to the conclusion that effective work can be accomplished by carefully practising the cultivator method. In dry years it is more effective than in wet seasons as the weeds are killed more readily and there is less likelihood of having the land open than where the plowing has been done late in the season. To be efficient any summerfallow must be cultivated or disked early in the season to destroy weeds while they are still small. Whether the plow or the cultivator is used afterwards is largely a matter of choice and convenience.

CORN-GROWING

An effort has been made during the past season to extend the acreage devoted to corn-growing, by disseminating information on the proven value of the crop, the best cultural methods, and varieties that have proven best adapted to our conditions. Assistance was given to many growers in securing seed or advising where seed of good varieties could be obtained. A fairly large acreage was planted but the results this year have been disappointing

Germination was generally good but the growing conditions during May and June were most unfavorable, being dry and very cool. The heat during July was not accompanied by sufficient moisture to furnish good growing conditions. When rain did come in August the temperatures were too low to favor the corn crop and instead of the rapid development of the crop that we usually get at that time of year, it made slow headway and comparatively little ripened.

Growing conditions at the early part of the season were so poor and the crop looked so backward that many farmers became discouraged with the crop and neglected cultivation. Those who kept up the cultivation were rewarded with a fair crop of fodder and in some cases considerable ripe corn. On a number

of farms good crops of corn fodder were harvested when the crops of wheat and oats were a complete failure. This was due partly to the fact that corn requires less moisture than the small grains and partly because it makes a better recovery after a long period of drought.

While the season was the poorest for corn of any in the last fifteen years, where it was given as good a chance as other feed crops it almost invariably proved its superiority for dry seasons. The results were not satisfactory, however, unless suitable varieties were used and the crop was well cultivated to keep it clear of weeds and to stimulate growth.

A few farmers this year planted a few acres of corn on summerfallowed land and where this practice was followed a good crop was harvested. Since we are likely to have many dry seasons this would appear to be a safer procedure than to put it all on spring plowed land—the fallow being in just enough better condition to carry the corn safely through a trying period.

Last spring arrangements were made with five farmers located at widely separated points in this district to try out a dozen varieties of corn that have not been grown here but which are used more or less in Montana and North Dakota. Two of these lots were a failure on account of the unfavorable season but the others made fairly good growth. The varieties under test were the following: Minnesota No. 23, Rustlers White Dent, Minnesota No. 13, Longfellow, Ivory King, Falconer, Dakota Gold, Shota, Mandan, White Flour, Pioneer White Dent, Wimple's Hybrid and Mandan King.

None of these varieties proved superior to those most commonly grown namely: North Western Dent, Gehu and Dakota White Flint. The most promising of the varieties named above are Falconer, Pioneer White Dent, Minnesota No. 23, Shota and Ivory King. These are all somewhat later than Gehu and Dakota White Flint and will prove better adapted for fodder than for mature corn. They could only be expected to ripen in exceptionally favorable seasons.

A Corn Show was planned for Medicine Hat for November, but owing to the season proving so unfavorable for corn it was decided to abandon it for this year.

TRIALS OF OTHER CROPS

Seed of Sudan Grass, Early Amber Sugar Cane and Broom Corn was placed in the hands of a number of farmers but the results this year were not satisfactory. Germination was poor in most cases and owing to the cool weather in June and August the growth was poor. All of these crops require warm weather for satisfactory development and since this part of the province usually has three fairly warm months and four months free from frost they may prove on further trials to have a place among the crops worth growing.

The trials of bean varieties were continued. Three varieties: Lady Washington, White Navy and Mexican Red were distributed. The latter proved to be quite too late for this province. The other two varieties did not give as good results as usual but did sufficiently well to warrant their being given further trial. Some of the earlier varieties of colored beans may prove even better adapted to conditions here and are worthy of being tried.

SHORT COURSES AND MEETINGS

In February two-day short courses were held at Bindloss and Gleichen. At Bindloss there was excellent local support with the result that good crowds of interested farmers were on hand for each of the five meetings. The total attendance was over six hundred. The Gleichen meetings were not well supported, only two of the five meetings advertised being held and these were poorly attended. The subjects under discussion included the following: Bacon Hogs, Sheep, Beef and Dairy Cattle, Corn-growing, Seed Improvement. Animals were used for demonstration purposes in all the live stock talks. A show of corn and other farm seeds was also held in conjunction with the short course at Bindloss. The exhibits furnished excellent material for illustrating the talks on corn and grains.

Seventeen other farmers' meetings were held during the year in the district, with a total attendance of over eight hundred. Various topics were discussed at these meetings, the principal ones relating to soil cultivation and the growing of fodder crops. Other meetings attended and addressed included the Provincial Seed Fair, Edmonton; Northern Montana Corn Show, Wolf Point, Montana; Saskatchewan Corn Show, Swift Current, Sask.; Cypress Hills Water Users' Association, Piapot, Sask.; Ex-Students' Reunion, School of Agriculture, Olds, Alberta; Short Course on Irrigation, Lethbridge.

POULTRY CULLING

With the co-operation of the Poultry Branch twenty-one flocks of chickens, a total of about 1,000 birds, were culled in the Bindloss district in October. There was a request for similar work around Seven Persons but it was not possible to get a culler from the Department. This work is appreciated by the farmers and could very well be extended another year.

COW TESTING

In June a cow testing association was organized in the neighborhood of Medicine Hat in co-operation with A. G. Moore, Dairy Promoter for Alberta. A membership of twelve was secured. Some of these men moved away before the end of the year, but we expect to be able to get others to take their places in the spring.

OTHER ACTIVITIES

The short crop in Eastern Alberta not only made it unnecessary to import any harvest or threshing labor but resulted in a large number of men and teams being available for work in other districts. I co-operated with the Employment Service of the province in appointing local representatives for the bureau throughout the district to assist in placing the help available. The great majority of those farming in this district worked for varying periods at harvesting and threshing in other parts of the province or in Saskatchewan.

A week was spent in October in the Lethbridge Northern Irrigation district assisting in a survey for the Irrigation council.

Throughout the year assistance had been given to numerous farmers in securing or disposing of seed of various farm crops and in the purchase and sale of live stock and poultry. There is a growing interest in the use of improved strains of wheat and oats, and a considerable quantity of registered seed was sown last spring. The effect of this will soon become apparent in an improved quality of grain.

Some preliminary work was done last spring toward the organization of two Swine Clubs but it was not possible to get a sufficient number of members to make it advisable to complete organization. Feed has been so scarce this fall that there would have been difficulty in finishing the hogs had the clubs been formed.

A circular on Feed-growing in South-Eastern Alberta was prepared in December. The chronic shortage of feed has probably done more to retard progress in this part of the province than anything else. To help overcome this the circular summarized the experience of farmers in attempting to grow those feeds adapted to this district.

Respectfully submitted,

JAMES MURRAY,

District Agriculturist.

REPORT OF M. E. FRENG, DISTRICT AGRICULTURIST,
LETHBRIDGE

S. G. CARLYLE,

Livestock Commissioner.

SIR,—

I have the honor to present herewith a report on my work for the year 1924.

We entered the year 1924 with agricultural conditions greatly improved throughout the south-western part of the province. We

had a fairly good crop in all parts of our territory during 1923 but the precipitation during the fall of 1923 was very light throughout the greater part of the dry area and there was very little snow during 1924. The moisture conditions in many districts during seeding time were serious, there being scarcely enough to germinate the seed and there was no reserve moisture, which delayed germination until late in the spring. We had a fair amount of rain during June causing a rapid growth, but during the first couple of weeks in July we experienced very hot weather which burned the crops out completely in many districts due to lack of reserve moisture. Fortunately this was not the case south of Lethbridge and north to Calgary. The moisture conditions were better in those parts and they had a heavy precipitation during June, resulting in some excellent yields of grain.

Considerable corn and sweet clover were seeded last spring. The season was backward for corn but still it made good fodder and on some of the farms considerable corn matured sufficiently for hogging off. In some cases several loads were husked and stored for winter feed. There were several failures in getting a catch of sweet clover due to the dry spring, but there is a noticeable increase in corn and sweet clover throughout the dry areas. It is, without a doubt, the surest and best fodder that can be grown in dry districts. This crop will fit in to a short rotation nicely and I look for a great many farmers gradually to work into a system along this line. However, any change in the system should be developed gradually and to suit the individual farmer's conditions.

There was a great deal of land that came under irrigation in the spring of 1924: the Lethbridge Northern, the United Irrigation District and the New West. There had been no arrangements made for assisting the new farmers in locating their farm ditches. They all have too large holdings of land to successfully farm under irrigation considering their circumstances after several crop failures in some of those areas. Naturally there was no levelling or any preparation for irrigation so there was no use to dwell on the advanced methods of irrigation farming. The farmers required ditches, which is the first essential before they could make a start. I arranged for Mr. Giffen to spend all his time at locating ditches and giving general information in connection with this problem. We could not give as much time to every farmer as we would have liked to. During the busy irrigation season we had up to eighty applications in the office for assistance along this line. We finally secured the services of Mr. Eisenhower for a few weeks to help out and later engineers from the Department of Interior spent a few days in some of the districts. After the highline ditches were completed we were able to give some attention to field laterals and applying the water on the farm. Mr. Griffen spent the whole season in the Lethbridge Northern and approximately 1,000 miles of ditch were surveyed as well as fills and reservoirs.

The farmers in the Lethbridge Northern, under these very trying conditions, have made as good progress in the use of irriga-

tion water as any new district that I know of. We encouraged fall irrigation and good progress was made along this line. We were not able to give much assistance in the United or New West District, although the United District had sufficient rainfall to grow a good crop and there was not a great deal of irrigating done in that district. But very good crops were obtained from the natural precipitation.

The new irrigation districts that I have referred to will be in much better shape in 1925. They have had one year's experience and the land will be better prepared for irrigation. However, their holdings must be cut down considerably before they can expect to successfully irrigate their land in season.

Considerable Alfalfa and pasture were seeded last spring. While most of the farmers realize the importance in mixed farming and are anxious to plunge into this type of farming, there must be judgment used in developing a balanced system of farming. It will require both time and money and the very best of management and we should avoid making the radical changes and mistakes that we have in the past.

While we have devoted most of our time to farm problems, I have spent considerable time with the Lethbridge District Calf Club. This Calf Club was organized in the fall of 1923. A uniform lot of calves were selected and the competition commenced January 1st, 1924, with twenty-eight members. These calves were shown at the Lethbridge Fair and auctioned off to the highest bidder. It was generally admitted that the Calf Club members had a very fine class of Baby Beef. The champion calf brought 50 cents per lb. The balance sold from 25 cents down to the market price. There are thirty-eight members entered for the 1925 competition and I look for even better results in this competition.

Mr. Giffen and I held seventeen meetings throughout the Irrigation section. We were accompanied by Mr. Bennion and Mr. Dahl, of Raymond and Magrath. Subjects discussed were along irrigation, crop rotations and sugar beet culture. Committees were appointed at all of these points to encourage the preparation of a certain amount of land for the growing of sugar beets in 1925. The sugar company insisted on 6,000 acres being prepared and in consideration of same they were to erect a sugar factory somewhere in the south. I spent considerable time with the various representatives of the sugar company; calling on these committees and inspecting the land. The officials of the sugar company seemed well satisfied with our conditions and the preparation of the land. The tonnage produced here was very satisfactory and the sugar contents of our beets are considerably higher than that of the States. The prospects of a factory being erected look very promising in the near future.

The grasshopper control work has been handled from this office by Mr. Frayne. While the grasshoppers were not as bad as in the previous year, yet there were certain areas where they

were very numerous and would have destroyed the crops had it not been for the Government's assistance.

Relief and seed grain collection work has also been handled from this office by Mr. Frayne as well as co-operation with the Labor Bureau in placing farmers from the dry areas in the harvest fields in the good crop areas.

This office has been kept very busy with the farmers calling to discuss the various problems.

The representatives of various Government Departments have shared the office with us and we have enjoyed the very best co-operation.

Correspondence has been very heavy throughout the year.

Respectfully submitted,

M. L. FRENG,

District Agriculturist.

REPORT OF H. W. SCOTT, DISTRICT AGRICULTURIST,
SEDEGWICK

S. G. CARLYLE,

Livestock Commissioner.

SIR,—

I have the honor to submit my report as District Agriculturist at Sedgewick for the year 1924.

The activities of a district agriculturist increase every year with the added calls for organization and supervision over young people's work as well as with expanding demands in other lines. The Provincial and Dominion Departments of Agriculture and the University in their activities in the district call more and more for the services of this office. This is as it should be, as working together more effective work can be done without duplication or unnecessary loss of time.

The year has been somewhat of a disappointment particularly in the eastern portion of the territory, for while moisture and general crop conditions in the spring were satisfactory for quick germination of the seed, dry weather followed with a heavy reduction in yield, and the late rains and unsettled condition with frost just before harvest, combined with wet weather at threshing time caused a decided lowering of the grade of wheat. The number of live stock in the district as a general rule has been reduced to the numbers that may be safely fed on the farm during an unfavorable season. Too many beef cattle are marketed off grass in an unfinished condition to give a profit over the cost of raising. More cows are being milked and this class of cattle is generally

improving in type and production but the progress is necessarily slow. Cheap nutritious pasture and fodder crops are receiving more attention and sweet clover as pasture, hay and silage is gaining in favor, as it works well into a rotation where wheat is the important and principal cash crop of the farmers. It is replacing corn and sunflowers at the present time. New silos are being dug or erected each year and provision is being made for better winter feeding. During the winter of 1923-24 with coarse grains low in price a goodly number of cattle were fattened by those in a position to do so, with satisfactory returns. With a much lighter crop this year the number being fattened is much reduced. There is, however, a general return of confidence noted everywhere that speaks well for the future of the district.

SCHOOL FAIRS

The School Fair has become firmly established in the communities where it has been given an opportunity to function. The local people are assuming more of the local management and there is not in this district now the feeling that it is a Government movement and that it is therefore the duty of the people to criticize it, but rather they realize that it is their own organization largely and that its success or failure depends on their individual efforts and interest. The improvement in the quality and uniformity of the exhibits is gratifying and is one of the best indications of the educational value of the School Fair. Due to the increase in the number of exhibits and to added educational features at the Fair, exhibits this year were brought in and placed ready for judging, the evening before and the judges were able to complete the awarding of prizes on Fair day by 1 p.m. This gave the competitors, teachers and visitors more time to examine the exhibits and discuss the awards made, as well as leaving time for Judging Competitions and Demonstrations by the children. The Scholarship Course at the Olds School of Agriculture to the boys and girls winning the most points at each School Fair has been greatly appreciated not only by those attending but also by the parents and all interested in School Fair work. Eleven School Fairs were held in this district at which there were 12,291 exhibits and 115 schools with 2,307 pupils taking part. I would strongly recommend that the prize list covering the classes in school work for the coming School Fair be in the hands of the teachers by October 1st, each year, so that the teachers in following the prescribed Course of study throughout the whole year might select the best work of the pupils for exhibiting at the Fair. This would give added incentive to the pupils to do their best work and would make possible a creditable exhibit from the school without a mad rush just before the summer examinations or between the opening of school after the summer holidays and the Fair.

We were favored this year by having Mr. S. C. Freeborn, Sheep and Swine Promoter for the Dominion Department of Agriculture, attend most of our Fairs and give demonstrations in bacon type hogs, using both the live hog and the cured sides. This feature was appreciated.

PUBLIC-SPEAKING CONTESTS

Ten of our School Fair Associations conducted Public-speaking Contests at which 81 pupils gave addresses. The prizes were medals and in each case were arranged for by the Association. Mr. A. G. Andrews, M.L.A., donated five of the first prize medals to Associations in his constituency. The chief value in these contests is in establishing confidence and freedom of speech in the girls and boys when appearing before large gatherings and in preparing of material on a definite subject and presenting it in a pleasing and convincing way. The Extension Department of the University assisted with the judging of the addresses and in the programme.

SWINE CLUBS

The value of the Swine Club in a district in improving the stock and as an educational factor in the life of the community is appreciated more each year. Six strong clubs functioned satisfactorily this year with a membership of 132 boys and girls. We held 24 judging classes at these centres and 47 members entered the judging competitions at the school fairs. The four standing highest in each of these clubs represented the club at the swine club competition held at Edmonton in November, entering the judging and demonstration competitions there and also attended the Alberta Bacon Breeders' Competition and short course held at the University on November 6 and 7. The experience at the stock yards and at the University has had a marked effect on those who attend in demonstrating type and the effect of feed on bacon production. This is marked by a decided demand for better bacon type breeding stock at once. The securing of satisfactory sires for our clubs has been a problem but the Dominion Government through its Sire Loan Policy has helped us greatly in this matter. The assistance given to swine club work by the railway companies must also be recognized. In all four car loads of hogs have been grown and marketed by these clubs, though only two loads were ready for the Edmonton Swine Club Show. The delay in marketing the other loads was due mostly to unsatisfactory breeding ability of three of the sires used in the clubs.

OTHER ACTIVITIES WITH THE YOUNG PEOPLE

As in former years this district was well represented at both Calgary and Edmonton Fat Stock Shows with creditable exhibits from the boys and girls and from the older people. Miss Ellen Price, of Lougheed, was able to capture the championship with her calf both at Calgary and Edmonton. In the Baby Beef Class in Edmonton with 16 out of the 68 entries this district won 1, 3, 6, 7, 8, 9, 11, 15, 17 and 21st awards as well as first in both the Hereford and Aberdeen Angus breed specials. Arrangements have been made for a local Baby Beef Competition to be held at Hardisty just prior to the Edmonton Spring Show and the local people will pay all the prize money for this event. The first Lamb

Club in the province was organized in the fall at Camrose and the creditable lambs will go to the Edmonton Spring Show. A Junior Farmers' Club was organized during the winter and for two months it met twice a week to discuss farm problems. The members were mostly young men who had left school.

OTHER ACTIVITIES

Some 150 farm hands were distributed from this office during the year. The field crop Supervisor made his headquarters with me also and while I was not directly responsible for his activities yet we were able to co-operate in many ways. Wire worms were doing considerable damage in the early summer and called for some attention. I was able to assist a number in securing sires and in selecting foundation dairy herds. The Dominion Department of Agriculture was collecting information from farmers who were fattening cattle as to costs, feeds and profits and I was able to assist in getting this information throughout my district. The American Tariff Commission held a sitting at Sedgewick and I arranged for the farmers to appear before them. I also arranged for and assisted the Extension Department of the University to put on a series of Health Programmes at five points. A successful Agriculture Short Course was held at Alliance which called for some attention. Considerable time was given up to meetings with various U.F.A. organizations, Directors of Agricultural Societies, local Creamery gatherings, local Wheat Pool organizations, Horse Clubs, etc. When sufficient help could not be secured from the Provincial or Dominion Poultry Branches for the culling of poultry I did the culling myself. We assisted in the car load shipment of poultry from the district. I judged the Plowing Match held at Killam and at the Agriculture Society Fairs held at Camrose, Vermilion, Viking, Irma, Sedgewick and Goose Creek.

Only through the loyal support so willingly given by the people of the district has it been possible to meet the demands made on this office.

Respectfully submitted,

H. W. SCOTT,

District Agriculturist.

REPORT OF F. H. NEWCOMBE, DISTRICT AGRICULTURIST. VEGREVILLE

S. G. CARLYLE,

Livestock Commissioner.

SIR,—

I have the honor to submit herewith my first annual report as District Agriculturist at Vegreville.

My work with the Alberta Government commenced December 1, 1923. My first official duties consisted of a selling trip for the Egg and Poultry Marketing Service along the C.N.R. to Prince Rupert. In general this trip was not successful, since while a few sales were made the volume was not sufficient to warrant the expense. I was about one week late for the Christmas trade and in addition there is competition from Burns and Swift which the E.P.M.S. cannot hope to meet.

The office in Vegreville was opened about January 1st. The first opportunity to get acquainted with the people was provided by the sitting of the U.S. Commission investigating the tariff on wheat. A number of farmers were met in this way.

Activities throughout the year have centred on School Fairs and live stock clubs among the girls and boys. Those in charge of the Vegreville School Fair felt their large Fairs had not indicated real success or progress because—

1. Girls and boys were exhibiting articles which did not truly represent their own effort.
2. There was a lack of proper appreciation of the objects of the School Fair on the part of the parents.
3. There was no really constructive programme looking to definite improvement in farm produce in the district.
4. Boys who had left school, but who were still under 21 years of age, failed to be attracted by school fair activities deeming them to be childish.

Suggestions with a view to overcome these difficulties were incorporated in the re-organization of the work as follows:

1. Members were limited to not more than two Agricultural projects to prevent over-ambitious children from attempting too much.
2. Ownership of exhibits, while not insisted upon, was encouraged to the utmost. This is the best check on dishonesty and is a great stimulus to interest. Ownership of all classes of live stock was made possible for the children through the splendid co-operation of the Canadian Bank of Commerce at this point. Credit was given to Club members on their own notes.
3. All agricultural projects were planned with a view to making them not only interesting and attractive but also remunerative, and of a permanent nature. Each project has a logical culmination either in the sale of proceeds or the retention on the farm of a better class of product.
4. Quality was striven for rather than quantity.

SWINE

A Swine Club was regularly organized to take care of this section at the School Fair. Thirty-six members took part, each with three Yorkshire pigs. Grade sows were used owing to the cost of pure-breds. Every pig had to be purchased, which necessitated considerable driving but provided an opportunity to meet many farmers. Thirty-two pairs of hogs were exhibited at the School Fair—the best of its kind ever seen at Vegreville. Sixty hogs were shipped to Edmonton where they stood fourth in the car-lot competition. In the classes for single hogs Vegreville won 4th, 14th, 19th, 25th and 29th. The team representing the Club in judging stood first and the high boy in the competition was one of these. In addition also both C.N.R. and C.P.R. competitions were won by this Club. The Vegreville Board of Trade gave valuable support to this project and donated a silver trophy.

As winners of the Canadian National Railways competition for Alberta the Vegreville Swine Club team went to the Royal Show at Toronto in charge of the Railway and attended by their trainer. There they were again successful and brought Dominion honors to Alberta for Bacon Hog Demonstration and Judging.

The grade sows retained by the members are of fair type. Following up this work seven Yorkshire boars of approved type and breeding were placed in different parts of the district under the Dominion Loaning Scheme for the use of Club members and others.

CALVES

The School Fair work with calves was not changed appreciably. Ownership of calves of approved type was encouraged and considerable supervision was given throughout the season. In the beef class 35 calves were exhibited in the three sections for nursed, pail-fed and Shorthorn calves. In the dairy class there were 20 calves, nearly all of them having been purchased from Edmonton dairymen through the School Fair Association. Only calves from high producing dams and of good type were purchased. A silver trophy donated by the Vegreville Creamery stimulated interest in this class and it was won by a Ukrainian boy.

POULTRY

In this section each member was required to use 3 sittings of eggs or 25 chicks of approved breeding. The object of this was to ensure enough pullets to form the nucleus of a new farm flock. Seventy girls and boys took part and approximately 200 birds were exhibited at the Fair. Egg type rather than exhibition standards was encouraged and only the four common varieties were used, namely: Barred Rock, White Wyandotte, White Leghorn, and Rhode Island Red. This project will be carried on by mating with good cockerels and systematic culling and selection. A silver trophy was given for this section by one of the merchants.

GRAIN

The old system of showing the parents' grain was abolished. Each member took enough registered wheat, oats, or barley to seed approximately one acre of land. This was sown on breaking or clean summerfallow and throughout the summer members were given instruction in roguing and caring for the plot. A standing Crop Competition was held for each class of grain. Thirty boys and girls took part and as a result of the first year's operations there will be enough 1st generation Marquis wheat to seed 300 acres in 1925. This is more than was ever introduced to the district in any two or three seasons. This work will be followed up by registration of the plots in 1925.

GARDENING

The only changes made in this project were to stipulate a minimum size for the gardens of 300 square feet and to hold a Standing Garden Competition. This was restricted to those attending school and there were 315 entries. Judging of the standing gardens discovers those who have not attended to their work and these are not permitted to exhibit at the Fair.

The following School Fairs have received attention also: Ranfurly, Andrew, Chipman and Bruderheim. The two first mentioned were organized in 1924 by Mr. Benn and myself. Lamont and Boian dropped out this year. The four Fairs mentioned used the usual methods with reasonable results and the usual drawbacks.

During February and March four Short Courses were arranged at the following points: Vegreville, Vermilion, Smoky Lake and St. Paul. On the whole these courses were quite successful though at this point the weather was unfavorable. The courses were apparently appreciated and the average attendance was about 125.

A limited seed survey was conducted during the spring months. Twenty samples were taken from drill boxes and forwarded to Calgary for analysis. A synopsis of results is given below:

Total number of samples	20
Number containing wild oats	9
Number containing ball mustard	8
Number containing both	5
Number containing other kinds of grain	20
Average germination	91%
Average number of wild oats sown, at 1½ bushel rate	1400
Average number of all weeds sown, at 1½ bushel rate	8400

While this survey is not very comprehensive it indicates that greater attention should be paid to the quality and cleaning of grain in this district. Indifference or ignorance as to the seriousness of wild oats was evident and immediate steps should be taken to prevent their spread.

Some judging was done at Agricultural, Seed and School Fairs outside of this district.

During the summer training in live stock judging was given to girls and boys both at Lamont and at Vegreville. Competitions were held at the Fairs in these two places in my charge. In many cases the children who had training won over their adult competitors. Swine Club members were given special classes in Swine judging.

A poultry culling campaign was carried on through the territory from Ranfurly to Lamont, co-operating with Mr. Cormie, of the Dominion Live Stock Branch.

Number of flocks culled	85
Number of birds handled	4253
Number culled out as unprofitable	2013

One of the best features in connection with this work is the opportunity provided to meet the people on the farms and give advice and information, care, feeding, housing, diseases, marketing and the many problems affecting the poultry raiser. In future, however, care will be exercised to confine this service to those who really wish to improve their flocks and their methods.

Following the culling a marketing service was arranged through the E.P.M.A. Owing partly to competition and partly to the weather this was not very successful.

In order to have authentic and first hand information as to the possibilities of alfalfa growing in this district two test plots were seeded last spring. Each is one acre in size, is seeded in rows and the variety used was Macsel. The heavy snowfall should be favorable for wintering.

In general it may be said that the work of the District Agriculturist in this district is meeting with good local support and more and more farmers are coming in to discuss their problems. The wide range of these problems is indicated by the fact that information has been given out in meetings and from the office on the following subjects: Hog-grading, feeding, alfalfa, registered seed, forage crops, weeds, dehorning, animal diseases, school fairs, incubator operation, smut, rust, nitro culture, registration of grain and live stock.

Respectfully submitted,

F. H. NEWCOMBE,

District Agriculturist.

REPORT OF A. R. JUDSON, DISTRICT AGRICULTURIST,
GRANDE PRAIRIE

S. G. CARLYLE,

Livestock Commissioner.

SIR,—

I have the honor to submit herewith a report of the work in the Peace River District for the year 1924.

The first work of this office, which was opened in January last, was the organization of the short courses for the Department. Owing to the extent of the territory and the writer being unacquainted with the district, most of the time previous to the first week in March, when the courses commenced, was spent in securing suitable live stock for the demonstrations and in organizing and advertising the courses generally. Fortunately the weather was good for all four courses, Sexsmith, Spirit River, Waterhole and Berwyn and for the meetings which were held simultaneously, at nearby points. The attendance at one or two points, was not just what it might have been, but the aggregate was over 1,200. These gatherings afforded the writer an opportunity of meeting a number of farmers.

About the middle of May grasshoppers were hatching in large numbers in many sections of the district. The writer was made responsible for the direction of the campaign. The two stations, operated the previous year, at Sexsmith and Hythe respectively, were reopened. Later, a station was opened at La Glace and another near Halcourt. These stations served the Local Improvement Districts in the Grande Prairie area and furnished considerable bait to the two adjacent Municipal Districts. Their season's output of poison bait totalled some 140 tons. In addition, Bear Lake Municipal District No. 740, operated a mixing station near Lake Saskatoon with an output in the neighborhood of 60 tons. In all, practically 200 tons of bait were turned out in the Grande Prairie District.

These efforts served to hold the grasshoppers in check and saved much crop. Had such action not been taken, the crop in many sections, would have been entirely lost.

When the organization, in this area, was working satisfactorily, assistance was given the municipalities north of the Peace where heretofore no poisoning had been done. Poisoning there in 1923 and quick action in the spring of 1924 would have prevented a few total losses and considerable partial damage. However, once started the two councils and the farmers generally took hold of the campaign and much good work was done.

Grasshoppers appeared in a few places near Spirit River during the latter part of the season. Bait was supplied by the Municipality.

Should the spring of 1925 be favorable for the grasshoppers a more extensive campaign than that conducted during the past year may be necessary. The majority of farmers have learned through experience that a grasshopper is really capable of doing damage and more co-operation no doubt will be forthcoming in future campaigns should they prove necessary.

One Pig Club, known as the Grande Prairie District Girls and Boys' Swine Club, was organized. This club extends from Bezanson and Teepee Creek on the east, to Beaverlodge and Valhalla on the west and has a membership of thirty. In spite of the inability of the supervisor to give it the attention it should have had, due to his time being almost wholly absorbed by grasshopper work for an extended period, and the lack of suitable threshed grains in many cases for finishing, the Club had a fairly successful year. The co-operation of the local Agricultural Society and the Retail Merchants' Association was secured in handling and financing the local competition at Grande Prairie, where 26 members were in competition. The following day the car-load was shipped to Edmonton for the Inter-club Competition.

Aside from the direction of the grasshopper campaign, the most important work seemed to be that of gaining an acquaintance with the people and acquiring a knowledge of the prevailing conditions. The grasshopper work concentrated attention on rather definite sections for a considerable period, but many miles were traveled over other sections of the country. The territory, however, is so extensive that what remained of one short season was all too little to gain the desired familiarity.

Not unlike those prevailing in many other areas, conditions in the Peace River country have been too strenuous for many during the past few years. However, the great majority of the best farmers have fought a good fight and are seeing it through. Many who have left have signified an intention of returning when conditions improve and the announcement of a direct railway outlet will bring many more.

The season of 1922 being a very dry one only a light crop was harvested. While 1923 was a good year the district was fortunate in the season of the year at which the rain came rather than in the amount received, and little moisture was carried over for 1924. The snowfall north of the Peace was heavy, but on the whole, south of the Peace it was light. With only 1.13 ins. of precipitation between April first and almost the middle of July, only a light crop was possible. Continued rain during the fall and early snow made harvesting and threshing difficult. Many fields of oats were uncut and much grain was damaged and as well considerable lost.

A good crop the past season would have gone a long way in re-establishing many farmers and financing them in changing to a more diversified and more stable system of farming. Many are bending their efforts in this direction. Success appears to be coming to those who are milking a few cows and feeding some hogs.

A number did well feeding cattle the past winter for the spring market. On account of a shorter supply of feed and higher priced grains few are feeding this year. No effort is being made towards a wholesale change to a live stock basis or to the accumulation of large numbers of beef cattle, but efforts are being made to induce farmers to diversify sufficiently, as soon as finances will permit, to take care of the cash outlay of the farm after that outlay has been reduced as far as possible by the production of home requirements.

Considerable progress is being made in dairying. Three creameries have been in operation during the past year. Quite a considerable increase was made in the output both at Peace River and Grande Prairie, by the Burns creameries, while the Co-operative creamery at Valhalla, 32 miles from the steel, increased its 1923 output of some 95,000 lbs. to over 171,000 lbs. for the past year.

The most important work in this territory seems to be along Farm Management lines, meeting as many of the farmers as possible, discussing their problems with them and giving them what is possible in information. Apart from the Short Courses and meetings mentioned above little effort was made in that direction. It seemed best to spend some time in becoming conversant with conditions first.

The Dominion Live Stock Branch has been co-operated with in placing pure-bred sires in the district. Mr. W. F. Wilson, of that Branch, judged the local Swine Club Competition.

A short time during the latter part of the year was spent in live stock instruction work at the Vermilion School of Agriculture.

Respectfully submitted,

A. R. JUDSON,

District Agriculturist.

Report of the Recorder of Brands

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the report on the work of this branch of your Department, for the year 1924.

During the year 737 horse brands and 1,045 cattle brands were recorded to their respective owners, while 265 transfers and 5 changes were duly registered. Certified extracts of brands numbered 3, searches 54 and strays 3,772, being a total of 5,881 transactions.

Compared with the year 1924, these transactions show an increase of 104 horse brands, 239 cattle brands, 44 transfers and 2 changes, while certified extracts show a decrease of 13 and searches and strays a decrease of 209.

The following table shows the different transactions which have taken place since separate records for the province have been kept:

Year	Horse	Cattle	Trans.	Changes	Extracts, Searches and Strays
1906.....	1,361	1,894	384	38	73
1907.....	1,030	1,230	430	28	73
1908.....	1,103	1,225	421	29	292
1909.....	1,308	1,326	430	33	783
1910.....	1,891	1,672	534	34	1,218
1911.....	1,538	1,280	362	32	1,408
1912.....	1,545	1,542	374	16	1,655
1913.....	1,471	2,059	419	11	1,795
1914.....	1,964	2,629	395	18	1,932
1915.....	1,350	1,899	743	27	1,372
1916.....	1,503	2,833	463	28	801
1917.....	1,839	3,370	551	33	673
1918.....	2,161	3,455	617	40	985
1919.....	2,079	3,165	572	46	2,125
1920.....	1,363	2,133	514	30	1,944
1921.....	896	1,304	308	22	2,401
1922.....	708	1,092	225	23	2,548
1923.....	633	806	221	3	4,035
1924.....	737	1,045	265	5	3,826
Aver. 16 yrs.	1,655	2,247	512	30	1,871

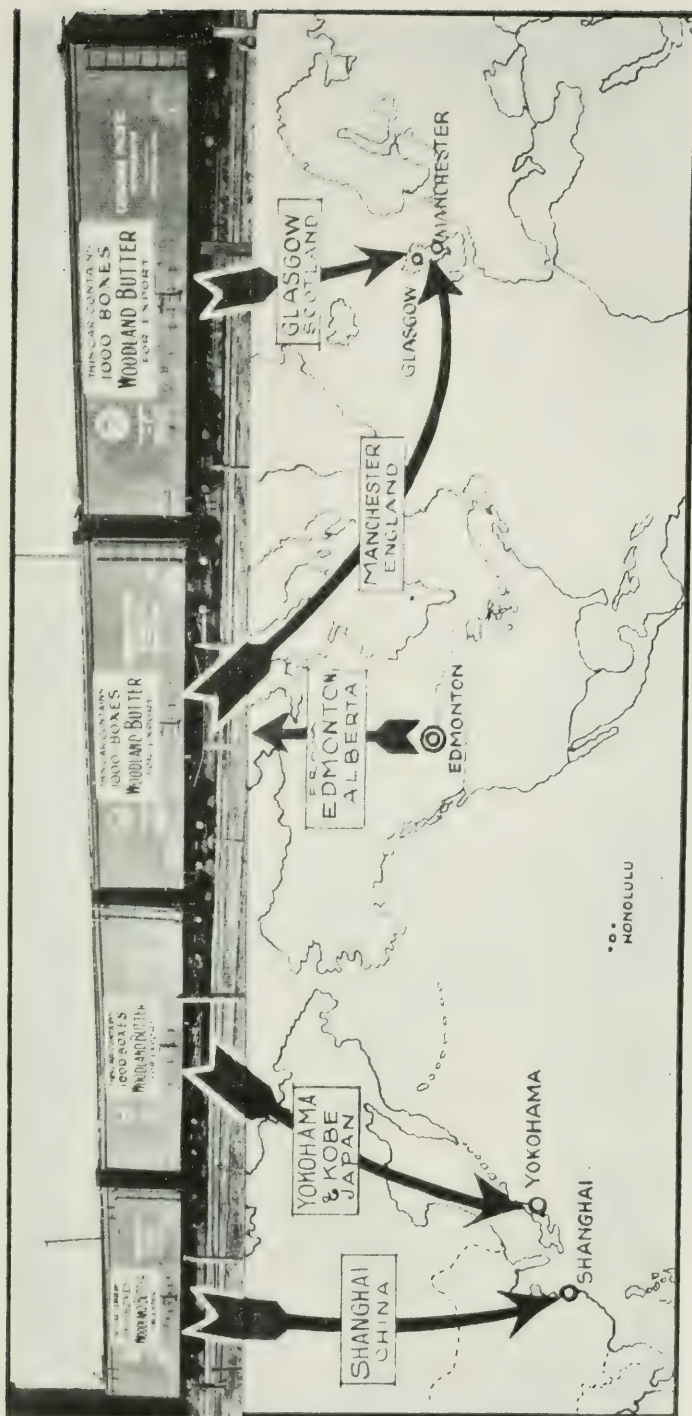
The number of applications for renewal of brands received during the year is 5,878, being an increase of 1,428.

Respectfully submitted,

S. G. CARLYLE,

Recorder of Brands.

HOW ONE SHIPMENT OF ALBERTA BUTTER WAS DISTRIBUTED TO WORLD'S MARKETS



Alberta exported in 1924 over 4,000,000 lbs. of Creamery Butter to the World's Markets. The above chart shows how one shipment of four carloads from Edmonton was distributed.

Report of the Dairy Commissioner

H. A. CRAIG, Esq.

Deputy Minister of Agriculture.

SIR,—

I have the honor to submit herewith the report of the Dairy Commissioner's Branch for the year 1924.

I.—GENERAL

The dairy industry of Alberta is a going, growing concern and the outstanding points of interest in connection with the year's operations were a considerable increase in production, a material general improvement in the quality of the cream and butter handled through the creameries of the Province, and a considerable increase also in the quantity of the butter exported by creamery operators direct to overseas markets.

The increase in production may be fairly measured by the butter and cheese output of the dairy factories. As a matter of comparison it may be recorded here that in 1922 fifty-four creameries were in operation and had a total butter production of 15,417,070 pounds. The seventy-five creameries that were operating in 1923 reported a butter production of 17,868,853 pounds. For the year 1924 the preliminary returns that have been received from the creameries indicate that the eighty-nine plants in operation manufactured 22,335,000 pounds, or a yearly increase of 25%. The figures for factory cheese production show that in 1922 fourteen factories produced 931,992 pounds. The thirteen factories that operated in 1923 reported a total production of 1,865,608 pounds and the preliminary reports for 1924 show that the twelve factories in operation have manufactured 1,714,790 pounds.

A continued improvement is being noted in the general quality of the cream which is furnished to the creameries of the province, and there has been a corresponding improvement in the butter output of many of the creameries of record. Through the activities of the Provincial Cream and Butter Grading Services the Department has been in a position to follow very closely this phase of the industry. It is quite evident that the forty odd thousand farmers who market their surplus cream through the creameries of the province, appreciate fully the choice of markets open to them through the principle of the grading of both the quality and the price of their product, according to the grade standards and the premium system established under the provisions of The Dairymen's Act. Under this arrangement every cream producer, who is patronizing a creamery, has at any given time a choice of at least three different prices for his cream, and this has in recent years proved a most effective argument for quality production.

Although most of the butter that is produced by Alberta's creameries is consumed in our home market and in British Columbia, it is important to note that an annually increasing proportion is being shipped to other markets. In 1922, for example, approximately one million pounds was exported by the manufacturers direct to markets outside of Canada. In 1923 these direct shipments for export had increased to two million pounds, and for 1924 more than four million pounds had been graded for export to Great Britain (principally) and to points in the Orient.

In discussing the exports of butter, it is interesting to note that while in 1923 some four thousand 56-pound packages of Alberta creamery butter were shipped to markets in Great Britain via the Panama canal route, last year (1924) the Central Creameries, Ltd., and P. Burns & Co. Ltd., Calgary, and the Woodland Dairy, Ltd., Edmonton, exported to Great Britain some thirteen thousand seven hundred and twelve packages via that route, a very material increase over the previous year. Complimentary reports have been received from receivers in Great Britain concerning the quality of butter which was shipped there from this province.

With regard to prices of dairy products for the past year, the statements given elsewhere in this report show that in the case of creamery butter the average price for 1924 was practically 5% lower than that of 1923, but notwithstanding that further reduction from the high post-war price level it was still 20% higher than the four-year average of 1911 to 1914. There was a considerable drop in the selling price of cheese, equivalent to about 20%, due mainly to the fact that at certain times of the year we now have a considerable surplus of cheese which must go into outside markets and there sell in competition with cheese from other provinces.

CREAMERIES AND CHEESE FACTORIES

There was an increase in the number of creameries operating in the province last year, the total being eighty-nine as against seventy-five for 1923. New creameries were put into operation at Metiskow, Millet, New Norway, Radway Centre, Sangudo, Bonnyville, Bottrel, Clive, Donalda, Edgerton, Rocky Mountain House, Sylvan Lake, Calgary (Swift Canadian Co. Ltd.) and Edmonton (Edmonton Pure Butter Company, Ltd.).

Cheese-making plants were operated at twelve points during the year. No new factories were established. The cheese plant that was operated by P. Burns & Company, Ltd., at Metiskow in 1923, was converted into a creamery.

DAIRY STATISTICS, ALBERTA

(1) *Milch Cows on Farms:*

Year	Cows
1901	46,101
1906	101,245
1911	147,649
1912	157,922

DAIRY STATISTICS—ALBERTA (*Continued*)

Year	Cows
1913	168,376
1914	179,068
1915	183,974
1916	284,895
1917	325,861
1918	328,702
1919	336,596
1920	305,607
1921	391,190
1922	392,037
1923	411,446
1924	434,237

(2) *Total Annual Value of Dairy Products:*

1900	\$ 546,476
1910	7,855,761
1915	15,895,586
1916	18,466,311
1917	24,794,597
1918	27,500,000
1919	31,625,000
1920	34,000,000
1921	25,500,000
1922	22,950,000
1923	22,975,000
1924	23,208,562

(3) *Creamery Butter Productions:*

Year	Creameries	Lbs. of Butter	Selling Value	
				c. per lb.
1912	53	3,010,755	\$ 823,500	(27.352)
1913	49	4,115,537	1,090,475	(26.496)
1914	46	5,444,806	1,417,000	(26.025)
1915	57	7,544,148	2,021,448	(26.795)
1916	57	8,521,784	2,619,248	(30.736)
1917	66	8,944,171	3,414,541	(38.176)
1918	56	9,053,237	4,025,851	(44.469)
1919	53	11,822,890	6,132,739	(51.87)
1920	53	11,821,291	6,555,509	(55.45)
1921	44	13,048,493	4,543,007	(34.82)
1922	54	15,417,070	5,126,843	(33.25)
1923	75	17,868,853	5,891,186	(32.97)
1924	89 (Est.)	22,335,000	7,035,400	(31.5)

(4) *Factory Cheese Productions:*

Year	Factories	Lbs. of Cheese	Selling Value	
				c. per lb.
1912	6	40,000	\$ 5,600	(14.00)
1913	7	70,716	5,900	(14.00)
1914	5	70,581	10,590	(15.00)
1915	13	381,832	68,441	(17.93)
1916	15	745,122	154,453	(20.73)
1917	20	1,274,905	280,185	(21.97)
1918	11	552,834	130,911	(23.68)
1919	10	520,530	145,161	(27.9)
1920	7	398,750	110,355	(27.7)
1921	10	930,660	200,478	(21.54)
1922	14	931,992	183,860	(19.73)
1923	13	1,865,608	368,771	(19.77)
1924	12 (Est.)	1,714,790	279,887	(16.32)

LICENSES UNDER THE DAIRYMEN'S ACT

There were issued during the year forty-two milk and cream testers' licenses in Form "A"; two hundred and five milk and cream testers' and graders' licenses, in Form "B"; and one hundred and seventeen creameries and cheese factories' licenses, in form "C." The fees for these amount to the sum of \$1,079.00.

II.—THE BUTTER-MARKETING SERVICE

The following table shows the quantity of creamery butter that has been handled through the Department's Marketing Service during the past five years, the right hand column indicating the proportion which this quantity bears to the total annual creamery butter production for each of these five years:

Year	Pounds of Butter	Per cent.
1920	918,601	7.8%
1921	862,799	6.6%
1922	1,017,094	6.6%
1923	1,381,318	7.7%
1924	1,738,993	8.1%

A summary is also given of the business handled during the year for the several creamery operators who had entered into the formal marketing agreement with the Department. The average selling price of the butter from each creamery varied according to the quality of the butter and also according to the relative quantities marketed during the different months of the year when the price level fluctuated more or less. In the month of January, for instance, the price of "special" grade butter was as high as 40 cents per pound in car lots, and other qualities in proportion, whereas, in the month of May the price had touched the low mark of 29 cents per pound, but recovered somewhat and remained fairly steady for the rest of the year. The butter marketed through this service is disposed of almost entirely in car lots and to the wholesale trade, and the average price realized for each grade through the year works out as follows, taking as a basis the grading and the average selling price of all the butter marketed:

Special Grade, flavour score 41 points.....	32.6 cents per lb.
First Grade, flavour score 40 points.....	32.1 cents per lb.
First Grade, flavour score 39 points.....	31.1 cents per lb.
Second Grade, flavour score 38 points.....	30.1 cents per lb.
Second Grade, flavour score 37 points.....	28.6 cents per lb.
Off Grades, flavour score 36 points.....	27.1 cents per lb.

SUMMARY OF BUTTER SALES FOR THE YEAR 1924

Creamery or Shipper	Pounds of Butter Sold	Selling Price at Calgary and Edmonton	Average Price per Pound Cents
Valhalla Co-operative Creamery Association, Valhalla	159,998	\$ 51,102.62	31.9
Beaver Lake Farmers' Co-operative Creamery, Ryley	103,376	33,261.90	32.17
Viking Co-operative Creamery Association, Viking	442,301	143,363.30	32.4
Falher Creamery Co., Falher	94,714	30,384.79	32.08
Bonnyville Creamery Company, Ltd., Bonnyville	51,777	16,189.81	31.27
Red Deer Creamery, Red Deer	97,496	30,818.34	31.6
Cardston Creamery Association, Cardston	98,840	29,996.26	30.35
Elnora Co-operative Creamery, Elnora ..	227,443	72,005.92	31.66
Hanna Creamery, Hanna	405,978	127,344.73	31.37
A. E. Kofoed, Coronation	57,064	18,705.96	32.8
Totals and Average	1,738,987	\$ 553,173.63	31.81



CREAMERY SHORT COURSE CLASS AT UNIVERSITY OF ALBERTA, EDMONTON

III.—GRADING OF CREAMERY BUTTER

It will be seen from the following table that the Department was called upon to grade a considerably larger proportion of the year's creamery butter output, including butter from a number of Creameries that were put into operation for the first time during the year. The quantity of butter graded amounted to 67% of the total butter production of the creameries.

Several of the larger operators market most of their butter output in the form of one-pound prints, and do not feel that they require the Department's grading of butter disposed of in that form. This accounts, largely, for the other 33%.

GRADING OF CREAMERY BUTTER, ALBERTA, 1915-1924

Year	Creamery Butter Manufactured Pounds	Average Selling Price Cents	Creamery Butter Graded by Department of Agriculture				
			Pounds	Percentage in each Grade			
				Special Grade	First Grade	Second Grade	Off Grade
1915	7,544,148	26.79	3,600,900	33.0	39.7	24.3	3.0
1916	8,521,784	30.74	4,214,312	43.9	41.7	12.9	1.5
1917	8,944,171	38.17	4,644,646	56.3	36.3	6.7	.7
1918	9,053,237	44.47	5,427,134	50.4	38.6	10.3	.5
1919	11,822,890	51.87	6,830,308	29.7	50.8	18.9	.6
1920	11,821,291	55.45	6,120,325	19.0	55.6	24.7	.7
1921	13,048,493	34.82	5,954,991	7.7	66.7	24.7	.9
1922	15,417,070	33.25	7,264,219	27.5	55.0	16.3	1.2
1923	17,868,853	32.97	*10,776,318	21.6	64.7	12.6	1.1
1924	22,335,000	31.5	*14,954,581	19.9	66.8	12.3	1.0

* This figure includes butter given initial grading for Federal Grading Certificates, namely, 1,073,256 pounds in 1923, and 905,688 pounds in 1924.

IV.—CREAM GRADING

The Provincial Cream Grading Service was considerably enlarged during the year on account of the number of new creameries put into operation.

Table II. shows the particulars of cream received and graded during the past three years at creameries where provincial graders were stationed. The gradual improvement that is shown in the quality from year to year is ample proof that the cream producers continue interesting themselves in the quality marketing idea and respond to the call of the market for high grade products. It is difficult to say whether or not we are getting close to the "irreducible minimum" in the matter of the percentage of under-grade cream. Be that as it may, the principal thing about the marketing of cream on a quality basis is that the cream producer has the opportunity to choose his market and he is, after all, the party most concerned.

GRADING OF CREAM BY PROVINCIAL CREAM GRADING
SERVICE, ALBERTA

	1922	1923	1924
Lbs. Cream Graded	30,778,344	41,824,366	49,612,861
Lbs. Butterfat.....	10,185,277	13,713,758	16,518,954
Average Fat Test	33.1 per cent.	32.8 per cent.	33.3 per cent.
Table Cream	2.3 per cent.	4.1 per cent.	3.3 per cent.
Special Grade	32.4 per cent.	39.1 per cent.	42.3 per cent.
First Grade	37.3 per cent.	40.5 per cent.	43.2 per cent.
Second Grade	27.2 per cent.	16.1 per cent.	11.0 per cent.
Off Grade.....	.8 per cent.	.2 per cent.	.2 per cent.
	<u>100.0 per cent.</u>	<u>100.0 per cent.</u>	<u>100.0 per cent.</u>

CONCLUSION

The foregoing statement refers to the more outstanding phases of our dairy development and the commercial activities of this branch of the Department. We have also had the opportunity during the year to assist in various lines of educational work, such as the dairy instruction at the College of Agriculture, University of Alberta, and at the Provincial Schools of Agriculture. Members of the staff of this branch have also attended and addressed a number of public meetings on matters pertaining to dairying, particularly the handling of the products. Three special Short Courses for Creamery Workers were put on at the Department of Dairying of the University, under the joint auspices of that institution and the Department of Agriculture.

Respectfully submitted,

C. P. MARKER,

Dairy Commissioner.

Report of the Provincial Veterinarian

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the Annual Report of the Provincial Veterinarian's Branch for the year 1924.

The work of the branch includes the supervision of the care of the live stock kept on the Provincial Demonstration Farms, assisting the owners of live stock in the prevention and eradication of those diseases which do not come under the Animal Contagious Diseases Act of the Dominion Government, educational work in this connection and supervising, generally, the health of the stock throughout the province.

EDUCATIONAL WORK

The Agricultural Schools at Olds and Claresholm have been in operation during 1924 with the courses in the Science of Applied Veterinary Medicine ably handled by Drs. Sweetapple and Buchanan, respectively. In September the Agricultural School at Vermilion, which had been closed during the first term of the year, was re-opened. At this school a special course in farm training is being given for the benefit of the boys brought over from the Old Country under an arrangement between the Provincial and the British Government. Besides the regular lectures in Veterinary Medicine, particular reference is made to the experimental work being carried on by the Department in connection with the most common diseases affecting live stock. This part of the work has been given entirely by the Provincial Veterinarian.

At the College of Agriculture, University of Alberta, the courses in this subject are more advanced and a thorough study is made of the various live stock diseases and the methods of prevention and eradication.

EXPERIMENTAL WORK

During 1924 we have been doing a great deal of experimental work in connection with contagious abortion and sterility in cattle, and in this work have been particularly fortunate in having at our disposal the animals of the Dominion Government Experimental Farm, Lacombe, and the C.P.R. Demonstration Farm, Strathmore. We have also experimented with the cattle at the University of Alberta, at the demonstration farms and other government institutions in the province. We have received invaluable assistance in this work from Mr. F. H. Reed, Superintendent of the Dominion Government Experimental Station, Lacombe; Mr. G. H. Hutton, Superintendent of the C.P.R. Agricultural and Animal Industry Branch; Prof. J. P. Saskville, University of Alberta, and Dr. T. B.

Harries, C.P.R. Veterinarian, and I wish to express my appreciation of their untiring efforts to promote investigation and research of these two particular diseases.

In many ways our experiments during the past year have been highly satisfactory. The cows which aborted were isolated, immunized with the living organisms (*bacillus abortus* vaccine) and not bred until two months later, and we have every reason to believe that a gratifying percentage of these will get in calf and not abort again. Those cows, however, which were suffering from Vaginitis or Metritis will, in all probability, have to be treated for some time before they may be safely bred. On several farms we tried the injection of the killed organisms (vaccine *abortus bacterin*) as a preventive agent against contagious abortion and we believe highly beneficial results were obtained. The difficulty in connection with this experiment was that many of the check animals also retained their calves to the full time and we are therefore not in a position to say whether the experiment was absolutely successful or not. We have also been trying the inoculation of young calves a few days after birth with an injection of the killed organisms. It is the object of this experiment to follow the history of these calves for a period of years after the injection. By the injection of this vaccine, we have reason to believe it possible that immunity may be conferred against Contagious Abortion throughout life. The heifer calves on the demonstration farms and the Dominion experimental farm at Lacombe are being used for this purpose and we hope to obtain encouraging results from this method. We also tried out in the way of a preventive against Contagious Abortion, the Bowman Abortion Remedy. This product was highly recommended as a preventive against Contagious Abortion but, unfortunately, we cannot say we derived any benefits from its use. However, from the application of the remedy in the treatment of eight sterility cases we are under the impression that 2 improved after receiving the second dose. In our report for 1923 we made certain recommendations for the prevention of the spread of Contagious Abortion and the handling of this situation by the live stock breeders in the province. We place considerable value on the sanitation of buildings and believe that by disinfection and the isolation of affected animals, a large number of these abortions may be avoided. Following are a number of suggestions which may be used in combating this trouble.

1. In herds where abortion has occurred we believe every cow should be handled as though she were known to be infected, and regarded so until she is proved otherwise.

2. We are advocating a separate stall, or better still, a small stable on every farm, for cows at calving time, where they may be placed prior to parturition and kept until all discharges following have ceased. This should be comfortable, convenient and constructed so as to be easily disinfected.

3. Straws from around the animal which has aborted, all after-births, aborted calves, or ones which have died at birth, must immediately be burned, or if buried should be covered with quicklime.

4. The disinfection of the building must be thorough. Strong solutions of creolin, kreso or Corrosive Sublimate are suggested, and in addition, it may be fumigated with formaldehyde before another cow goes into it.

5. Herd bulls should be kept for home cows only, and not for the neighbors' cows.

6. When abortion has occurred in the stable the cow should be isolated immediately, the fetus and placenta burned or buried and the stable cleansed and disinfected thoroughly. Where abortion occurs in the pasture it should be handled in the same way; the ground in that vicinity should be well sprayed with a strong disinfectant, or covered with several layers of lime.

7. The careful disinfection of the cervical canal of cows which have aborted, at least once a day with *one-quarter of one per cent. (.25%) Lugol's Solution* until all discharges have ceased.

8. When the cow comes in heat regularly the cervical canal is washed daily for two days before and three days after coming in season with a one-quarter of one per cent. Lugol's Solution. Again, in eighteen days, the same process is repeated. When bred, she is washed daily for twenty-one days with the same solution, and so far practically every cow has carried her calf to the full term of pregnancy.

9. The vulva, tail and neighboring parts of all exposed cows should be washed daily for at least two weeks with antiseptics, such as 3 per cent. solution of Carbolic Acid or Creolin, or a 1-1000 solution of Corrosive Sublimate.

10. From our experience we believe the time is not far distant when Contagious Abortion will be controlled entirely by vaccines and serums, but at present it requires considerable skill to use them successfully. Also, they are barely in the experimental stage and until we can secure more information from their administration we advise against their use.

11. Many are advocating the agglutination and complement-fixation tests for bovine abortion. We believe it is accurate in picking out infected animals, but the difficulty seems to be in obtaining the blood samples in the proper manner. It is possible that, with trained men to conduct the tests, much useful work could be done along this line.

STERILITY

The study of sterility in cattle is one which requires a great deal of careful investigation and is gaining in importance each year. The majority of the sterility cases which have come under our observation have been caused by retention cysts or inflammation of the ovary. In fact, from our experience, we believe that about seventy-five per cent. is due to these two causes; the other twenty-five per cent. is usually due to Metritis or an infected cervix. In our opinion, the operations for this trouble should never be attempted by any other than qualified Veterinary Surgeons who are familiar with the anatomical structures of the generative organs. In the sterility cases due to Metritis or infected cervix, it is impossible to get the animals to breed until the inflammation has been reduced. We find, that the persistent application of Lugol's Solution, as described in Suggestion No. 7, to be followed in the eradication of abortion, will usually cure the trouble. Many of the animals which we experimented with during the past year were believed to be hopeless non-breeders, but after careful treatment were successfully started breeding again. On the other hand, many non-breeders have, on examination, been found deficient in some organs essential to the breeding animal, and have therefore been eliminated from the herds, thereby saving a considerable cost to the breeder.

GOITRE

Goitre of calves and sheep, weak lambs, weak colts and hairless pigs are common conditions affecting domestic animals in certain districts of this province. The symptoms in these cases are often quite different, but it is now a conclusive belief that all are due to disturbance of the thyroid gland. We have gathered considerable data regarding the distribution of this trouble, and also regarding the conditions under which the animals are housed and fed, the composition of the soil and the water supply. From all the information attainable we find that the trouble is confined principally to those districts where the water supply is derived from streams whose sources arise in the Rocky Mountains. We have also come to the conclusion that lack of exercise, together with the extensive feeding of grain feeds, or allowing the animals to depend upon snow for their water supply are important factors in promoting this disease. As pointed out in our report last year, there is no doubt but that the number of cases of goitre is increased with a long winter season.

For several years this Branch has been carrying on experiments in an endeavor to find out the best method of prevention and control under Alberta conditions. The result of this work has proved that Iodine given in various ways to pregnant animals will prevent goitre. It is now universally administered and extensively used on many of our goitrous farms with beneficial results.

Treatment:— For some time now we have been experimenting with Tincture of Iodine and Potassium Iodide as preventives against goitre. Very satisfactory results have been obtained in this direction and especially from the experiments carried on by Mr. Peter Cook, of the Demonstration Farm, Claresholm. He has been careful and painstaking in trying these methods and is making further trials under the direction of this branch.

There are three methods of administering treatment for the trouble, any one of which gives very satisfactory results.

1. *Potassium Iodide administered internally:* It has been found that all species of animals respond to this treatment. The administration of two grains daily during the period of gestation is sufficient to bring gratifying results. The drug should be dissolved in water in the proportion of one ounce to a gallon. One tablespoonful of such solution contains approximately two grains of Potassium Iodide and is therefore a daily dose. Given in this way during the period of gestation a mare or cow receives a total quantity of a little over one ounce of the drug, while ewes, and sows receive approximately one half-ounce.

2. *Tincture of Iodine poured on the skin:* Probably the easiest method of treatment is to pour tincture of iodine on a pregnant animal's back once every two weeks. One teaspoonful is a dose for mares and cows and a half that amount is enough for smaller animals. The iodine should not be poured on the same spot each time as it will blister the skin and cause the hair to fall out. When treating sheep the wool should be separated and the iodine poured on the skin. In order to remember easily the time of administration it is recommended that all animals after being bred be treated on the first and fifteenth of each month.

3. *Subcutaneous injection of Tincture of Iodine:* This consists of injecting under the skin a ten per cent. solution of Tincture of Iodine once every two weeks, during pregnancy: ten mills (approximately one-third of an ounce) for cows and mares and five mills (approximately one-sixth of an ounce) for smaller animals. A hypodermic syringe is required for the injection.

From the experience gathered in our experiments so far we have found that the application of Tincture of Iodine externally gives us better results than the administration of Potassium Iodine internally. In dispensing this treatment it is essential that the point where the remedy is applied should first be thoroughly cleaned and in the case of ewes the wool should be carefully parted and the Iodine applied direct on the skin. In all cases we have obtained stronger lambs from the ewes when Tincture of Iodine has been applied than when the Potassium Iodine has been fed. However, we hope that after we have experimented further with both the Potassium Iodide and the Tincture of Iodine, more definite results will be obtained.

ENSILAGE POISONING

During the winter and spring of 1924 we received numerous reports of animals poisoned, presumably from the feeding of ensilage which had undergone certain chemical changes. In almost every instance the trouble was found where sunflower ensilage from pit or trench silos had been used, but whether the cause can be attributed to the state of the sunflowers when harvested, such as being too ripe or too green or injured from the effects of frost, we are not prepared to say. It is also possible that the difficulty might have been that the ensilage had not been sufficiently tramped or packed in the pit silo, which allowed too much fermentation to take place. In many respects this poisoning is similar to that produced by sweet clover silage in Ontario and the maritime provinces. When the clover becomes mouldy it produces symptoms in the animals, differing from those observed in Alberta in some regards, but apparently co-related. Our experience with this form of forage poisoning has extended over several years and we have found that poisoning from this source produced symptoms different from any other form of forage poisoning which has come under our observation. It causes serious changes in various organs of the body and it is quite possible that it even causes damage to a very much greater extent than we realize. The symptoms of affected animals as we have observed them are—

1. Frothing at the mouth.
2. Eyes staring, with the eye-ball bulging from the socket.
3. Quivering and twitching of the nostrils.
4. When the animal is forced to walk it lifts the feet high in the air, and walks with a stumbling and staggering gait.
5. The temperature is usually normal, but may be raised one degree.
6. The peculiar symptom is intense itching of the body, particularly in the region of the feet and legs. In all of the cases which have come under our observation we have found that the affected cattle have rubbed the legs to such an extent that quite frequently the claws of the fetlocks were completely torn off.
7. The duration of the attack is usually from twelve to sixty hours. For some time all treatments administered were unsatisfactory in the extreme. The usual remedies, such as would be used for forage poisoning, had apparently little effect. The mortality ran very high until a treatment recommended by many for weed poisoning, was tried with beneficial results. This consisted of the administration of acetic acid or vinegar, and in all animals where the remedy was tried before the case had progressed too far, excellent results were obtained. From the symptoms described above it would indicate certain chemical changes taking place in the blood and, by absorption, the irritation resulting, but just why this particular remedy should work so advantageously I am not pre-

pared to say. It is our intention to experiment with this disease this coming winter, in an endeavor to ascertain the cause of the trouble, and we hope to gain some information which will be of value in combating it.

BOVINE TUBERCULOSIS

In August, 1924, a research board was established in the Province of Alberta for the purpose of studying bovine tuberculosis in the transmission of the disease from animals to man and between animals. The following were appointed:

Dr. Rankin, Dean of the faculty of medicine of the University of Alberta; Dr. J. J. Ower, professor of pathology, Alberta University; Dr. Shaw, serologist, Alberta University; Dr. A. H. Baker, superintendent of the Central Alberta sanatorium; Dr. P. R. Talbot, Chief Veterinarian, Province of Alberta; Dr. D. L. McCullough, assistant superintendent, Ponoka Mental Hospital; Dr. W. C. Laidlaw, Deputy Minister of Health for Alberta.

Some considerable investigational work has been carried on since the inauguration of the board. This work has consisted principally of the inoculation of guinea pigs with milk from cows known to be suffering from tuberculosis, to detect if possible the spreading of the disease through that course. This experimentation will be extended carefully during the next few months, and it is anticipated that much valuable data will be secured in this way. Shortly before the new year we were also able to obtain from Dr. Albert Calmette, Director, Pasteur Institute, Paris, France, a culture of vaccine to be used on young calves as a preventive against tuberculosis. This culture is now at the University of Alberta and, under the direction of Dr. Rankin, is in the process of multiplication. When ready for use it will be experimented with, on the young animals at the Government Institutions of the province. We look forward with a great deal of optimism to the success of this vaccine as a satisfactory method of immunizing young calves against tuberculosis. We believe in this method lies the success of combating the disease.

THE STALLION ENROLMENT ACT

The new Stallion Enrolment Act came into force in April, 1924, which eliminated the use of the grade stallion for public service throughout the entire province. This Act also called for a different form of enrolment certificate from that which has been in use for several years. Form A (Without Examination) used for those stallions in the province which have previously been enrolled and for which the owners can produce Canadian Pedigrees properly recorded in their names. Form B (With Examination) is the certificate used in the case of a stallion imported into the province. It is necessary to have the imported animal examined by an official Government inspector before enrolment can be made, and an extra cost of \$3.00 is made in this connection. The introduction

of these new forms and cancellation of the old first, second and fourth class certificates has considerably simplified the work in connection with this Act.

Under the new Act there has been no general inspection of stallions, inspection being necessary only in those cases of stallions imported into the province, two applications only were applied for during the past year.

The stallions enrolled in the province during 1924 are as indicated below:

Clydesdale.....	175
Percheron	226
Belgian	77
Standard Bred.....	4
French Draft.....	2
Shire	11
Thoroughbred	9
Suffolk	4
American Saddle	1
Total	509

Respectfully submitted,

P. R. TALBOT,

Provincial Veterinarian.

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Report of the Field Crops Commissioner

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the Annual Report of the Field Crops Branch for the year 1924.

The work of this branch for the year 1924 consisted of the supervision of field crop competitions, combined seed crop and cleaned seed competitions, good farms competitions, local seed fairs, plowing matches, the operation of a central cleaning and grading plant for the handling of registered seed, the securing of markets for Alberta seed, school fairs and weed control and eradication. The provincial seed fair is also operated under this branch. A grain separator cleaning attachment was invented and experimented with.

FIELD CROP COMPETITION

Field crop competitions, combined seed crop and cleaned seed competitions and good farms competitions were held at Vegreville, Lake Saskatoon and Lloydminster. Messrs. McKercher and Judson judged Lake Saskatoon, W. E. Walker judged Lloydminster and W. J. Stephen judged Vegreville. In these competitions there were a large number of entries. The contest in each case was very keen.

PLOWING MATCHES

Plowing matches were held at Warspite, Killam, Rochester and Sedgewick. With the exception of the latter these events were keenly contested. Large crowds were in attendance and a great deal of interest manifested. After each plowing match addresses were given by the judges and others. Messrs. Patton, J. Bonner, H. W. Scott and H. E. Craig acted as judges.

PROVINCIAL SEED FAIR

The Provincial Seed Fair held at Edmonton, January 15, 16, 17 and 18, was undoubtedly the finest display of seed grain, grass and clover seeds and potatoes ever held in the Province of Alberta. Prizes were given for boys and girls' exhibits. The number of entries in this section although small was considerably larger than the previous year. The quality of the exhibits and work of the boys and girls was most commendable.

At this time the annual convention of the Alberta Seed Growers' Association was held, when valuable papers were given by prominent agriculturists of Canada. Keen discussions followed after each address.

Practically all the winners and exhibitors at the previous International Grain and Hay Show, Chicago, competed. In all there were 567 entries. The competitions for the best exhibits made up by the Agricultural societies was very keen. The Brooks Agricultural Society won first prize.

An excellent display of grasses and grains, threshed and in the sheaf was put up by the Publicity Branch of the Department of Agriculture. This exhibit was identical with the one displayed at the International Grain and Hay Show, Chicago, the December previous. Much favorable comment was passed on the merits of the exhibit, which was also educational, tracing the steps one by one in the production, handling and marketing of registered seed.

The total amount of prizes paid by the Department of Agriculture was \$2,263.25. Special prizes were given by the United Grain Growers Company, Calgary; The Alberta Pacific Grain Company, Calgary; P. Burns and Company, Calgary, and the Commercial Life Assurance Company of Canada, Edmonton.

The majority of the Provincial Seed Fair winners shipped their grain immediately to the T. Eaton Exposition, Winnipeg, where Alberta again carried off major honors in practically all classes.

PREMIUM WINNERS AT THE CHICAGO INTERNATIONAL GRAIN AND HAY SHOW

The Field Crops Branch arranged to have all exhibits come to the Government Cleaning and Grading Plant, from which place they were shipped at Government expense to the International Grain and Hay Show in Chicago. The exhibits were put in place in Chicago by Mr. F. H. Newcombe, Agricultural Representative at Vegreville. Owing to climatic conditions the quality of the grain exhibits in particular were not as good as in previous years. Alberta, however, stood second; Montana being first. The following prizes were won by Alberta exhibitors:

Hard Red Spring' Wheat

6th	Nich Taitinger, Claresholm
12th	H. G. L. Strange, Fenn
17th	J. H. B. Smith, Wolf Creek.
20th	H. Norman Fisher, Sedalia.
22nd	T. W. Meldrum, Raymond

Flax Seed

6th	R. A. Meeks, Manville.
19th	Albert Lougheed, Bowden.

Rye

5th	R. A. Meeks, Manville.
9th	J. W. Lucas, Calgary.

White Spring Wheat

8th	J. W. Lucas, Calgary.
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Alfalfa Seed

- 1st Nich Chjette, Brooks.
- 10th Merwyn E. Dethan, Gem.
- 12th Don H. Bark, Brooks.
- 13th Don Losey, Cassils.
- 14th Nunemaker Bros., Brooks.
- 15th J. L. Harris, Brooks.

Timothy Seed

- 2nd A. Hochstein, Pincher Creek.
- 3rd Roby. Cochrane, Grande Prairie.
- 7th Albert Loughheed, Bowden.
- 8th Louis C. Bonertz, Pincher Creek.
- 9th Damas E. Cyr, Pincher Creek.
- 10th A. Pelletier, Pincher Creek.
- 11th Wm. Lucas, Calgary.
- 13th O. M. Cox, Pincher Creek.
- 14th F. E. Neuman, Pincher Creek.
- 15th W. Otto Newman, Pincher Creek.

Two-rowed Barley

- 7th A. E. Barnes, Foremost.
- 8th W. T. Perry, Cayley.

Six-rowed Barley

- 15th R. A. Meeks, Manville.

Oats

- 3rd Wm. Lucas, Calgary.
- 5th D. S. Loughheed, Knee Hill Valley.
- 6th James R. Tattersall, Vermilion.
- 9th T. E. Seale, Tofield.
- 10th Frank Ball, Strathcona.
- 11th Alex. F. Galloway, Vermilion.
- 13th J. H. B. Smith, Wolf Creek.
- 15th A. E. Barnes, Foremost.
- 17th Albert Loughheed, Bowden.
- 18th J. W. Lucas, Calgary.
- 30th Robert McAllister, Eldorena.

Field Peas

- 1st J. T. Hill, Lloydminster.
- 3rd H. G. L. Strange, Fenn.
- 4th H. C. Graham, Riverton.

Local Seed Fairs

Agricultural Societies holding local seed fairs with dates and judges, were as follows:

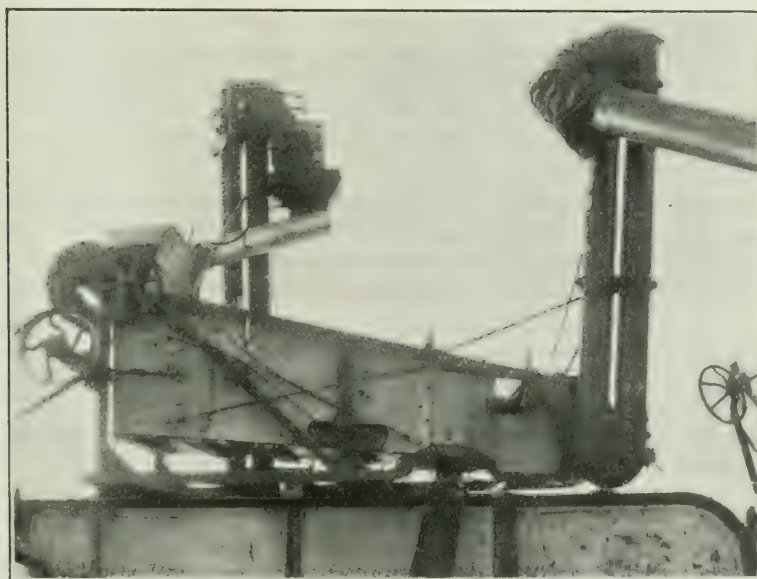
Olds	January	3rd	W. J. Stephen
Bowden	January	9th	F. S. Grisdale
Camrose	January	26th	W. J. Stephen
Vermilion	February	9th	W. J. Stephen
Lloydminster	February	19th	F. H. Newcombe
Vegreville	February	26th	B. J. Whitbread
Chauvin	March	1st	F. H. Newcombe
Lousana	March	12th	L. T. Chapman
Morrin	November	1st	Cecil Tapp
Brooks	November	6th	James Murray
Sedgewick	December	2nd	W. J. Stephen
Leduc	December	15th	W. J. Stephen

For the most part the number of entries at these fairs was not large, but the quality was good. Local seed fairs have been responsible for bringing out a large number of exhibitors who afterwards decided to compete at the larger shows in Canada and United States. It is to be regretted that more Agricultural Societies do not see their way clear to hold more local seed fairs.

NOXIOUS WEED WORK

During the year 1924 fourteen Field Supervisors were appointed. These men were allotted definite areas of the province to work in. The Field Supervisor interviewed councillors and individual farmers, secretaries of agricultural societies, town councils, secretaries and executives of local U.F.A.'s. The co-operation of each man and every one was solicited, the idea being, not so much to compel farmers to keep their weeds under control, but rather to educate and get community action. This policy proved popular and effective. Eighty-five per cent. of all Municipal districts became actively interested in weed control. A large number of public meetings were held throughout the province when subjects dealing with good farming were treated with, it being forcibly brought out by the speakers and in the discussions that if crop rotations and diversified agriculture were substituted for straight grain-growing, that the weed menace of the province would eventually be reduced to a minimum.

Municipalities, towns, cities, railroad companies and irrigation companies are to be commended on the excellent co-operation afforded to the Department of Agriculture in this very important business. It would appear that the way has been paved for greater and more lasting achievements.



GRAIN SEPARATOR CLEANING ATTACHMENT.

GRAIN SEPARATOR CLEANING ATTACHMENT

Realizing the necessity of cleaning the grain at the time of threshing on account of the heavy dockage obtained by many grain growers when their grain is shipped to the elevator, and also realizing the value of screenings when fed to poultry and live stock on the farms where they are produced the Field Crops Commissioner invented a grain separator cleaning attachment. This machine is installed on the deck of grain separators and is driven direct from the cylinder. It cleans the grain after it has been threshed and weighed by the separator. The Department built four of these machines this year for experimental purposes, the results were creditable. The machine is yet more or less in the experimental stage, although the principle has been established and the mechanical features of it very largely perfected.

GOVERNMENT CLEANING AND GRADING PLANT

The Provincial Government Cleaning and Grading Plant ended its second year of operation on May 31st, 1924. Sixty-seven thousand nine hundred and three bushels of registered wheat, oats and barley passed through the plant, where it was cleaned, graded, sacked and sold. This quantity was made up of:

Marquis Wheat	22,823 bu. 29 lbs.
Ruby Wheat	3,160 bu. 31 lbs.
Victory Oats	17,862 bu. 7 lbs.
Banner Oats	23,673 bu. 17 lbs.
Bark's Barley	684 bu. 20 lbs.
Banner Oats, sold on commission	300 bu.

These latter oats did not pass through the plant. All screenings from wheat and oats were profitably disposed of. Most of the oats were ground and sold as chop. The Dominion Government Inspector inspected each sack, sealed it and attached to it the Dominion Government registration certificate. A market was obtained for this seed in the United States, Europe, Alberta, Saskatchewan, Manitoba, Ontario, Quebec and British Columbia. Over 700 Alberta farmers purchased registered seed for the 1924 crop.

Seed for the third year's operation began coming into the plant in October, 1924. On December 31st, 1924, it would appear as though the plant would handle almost as much registered seed as in 1923 in spite of the shortage of high classed registered oats.

The Field Crops Commissioner, being a director of the Canadian Seed Growers' Association, attended the annual convention of the Canadian Seed Growers' Association held at Guelph in June. Many subjects of interest to producers of registered seed were discussed. Generally speaking the convention made history for the registered seed industry.

ALBERTA SEED GROWERS' ASSOCIATION

The executive of the Alberta Seed Growers' Association appointed at the time of the annual convention of the Alberta Seed Growers, which was held at the time of the Provincial Seed Fair, acts in an advisory capacity to the Department of Agriculture in

the management of the registered seed business. Meetings of the executive are held in Edmonton at the Department of Agriculture from time to time throughout the year.

There is a paid up membership of ninety-two Alberta farmers. The executive consists of: President, H. G. L. Strange; Vice-president, G. M. Stewart; Secretary-treasurer, W. J. Stephen; Directors, J. W. Lucas, E. C. Hallman, D. H. Bark.

SCHOOL FAIRS

In 1924 there were held in the province of Alberta one hundred and twenty-five school fairs in the following inspectorates: Bassano, Calgary, Camrose, Coronation, Edmonton, Foremost, High River, Lamont, Lethbridge, Macleod, Medicine Hat, Olds, Onoway, Oyen, Peace River, Red Deer, Stettler, St. Paul, Trochu, Vegreville, Vermilion, Wainwright, Westlock and Wetaskiwin.

The Field Crops Branch has general supervision of this work in the province. The details of the work locally are handled by the following: W. S. Benn, School of Agriculture, Vermilion; A. W. Foley, Department of Agriculture, Edmonton; F. H. Newcombe, Agricultural Representative, Vegreville; H. W. Scott, Agricultural Representative, Sedgewick; F. S. Grisdale, Principal Agricultural School, Olds; S. H. Gandier, Principal School of Agriculture, Claresholm. These men worked in close touch with the School Inspectors and with the Provincial Department of Education.

The following seeds were supplied by the Department of Agriculture to the various school fair centres.

Beets	1,805 lbs.
Carrots	705 lbs.
Peas	3,225 lbs.
Mangels	1,560 lbs.
Turnips	538 lbs.
Cabbage	6,900 lbs.
Parsnips	492 lbs.
Sweet Peas	473 lbs.
Asters	13,900 pkts.
Poppies	14,000 pkts.

The Department supplied judges for the various school fairs held in the fall and in addition supplied printed instructional circulars, entry tags, prize cards, mounting cards and insect pins for plant and insect collections.

Two-thirds of the money for live stock prizes is also paid by the Department, providing this portion does not exceed \$75,000 for each school fair centre.

In 1924 there were approximately one hundred and eighty-five thousand entries at the school fairs. This will give some idea as to the large number of children who competed.

Scholarship Short Courses were held at Olds and Claresholm in July of 1924 for the boy and girl from each school fair centre who stood highest in the 1923 local school fair. These courses proved profitable to those attending.

Respectfully submitted,

W. J. STEPHEN,

Field Crops Commissioner.

Report of the Poultry Commissioner

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the report of the Poultry Branch for the year 1924:

Available records show our poultry industry to have made very encouraging progress in 1924. We now have 7,214,819 birds of the various classes on the farms of the province. There has been little or no increase in the number of turkeys, ducks or geese, but other fowl show an increase of approximately ten per cent.

The following figures give the number and value of the poultry in Alberta:

	Number	Value
Turkeys	580,510	\$ 975,300
Geese	93,638	150,800
Ducks	98,455	75,800
Other fowl	6,442,216	3,286,140
Total	7,214,819	\$ 4,488,040

The increase in the number and value from year to year is shown in the following figures:

	Number	Value
1921—total poultry	4,963,565	\$ 4,251,500
1922—total poultry	5,422,130	3,981,200
1923—total poultry	6,630,163	4,189,300
1924—total poultry	7,214,819	4,488,040

Emphatic evidence that the farmers of Alberta are realizing the merits of poultry as a valuable adjunct in their diversified farming programme is given in recent census figures showing the average number of poultry kept on Canadian farms. We stand second for the whole of Canada, being exceeded only by British Columbia. In Poultry, Canada's average per farm is 63.9. The average for Alberta is 79.9.

THIRTY-THREE PER CENT. INCREASE IN EGG EXPORTS

One of the most convincing evidences of the industry's advancement is to be found in the definite records available showing the growth in our export business in eggs. In 1923 we had an exportable surplus of 47,747 cases or 106 car loads. In 1924 this increased to 60,133 cases or 133 car loads, an advance in one year of 33 per cent.

The quantity of eggs exported, however, does not reflect the full value of our egg crop. The great bulk of our production is consumed on the farms and in our own home towns and cities. To arrive at the value of the egg crop we have estimated the

number of egg-producing hens on farms to be 1,840,000, the yearly production per hen 72 eggs and average price per dozen 20 cents. On this basis the eggs produced in the province in 1924 would yield a revenue of \$5,796,000.

The year 1924 was a profitable one for the majority of operators in eggs, one of the chief contributing factors being the smaller storage holdings in the warehouses of both Canada and the United States. What quantities our handlers were carrying were eagerly sought after and were sold at profitable prices. This will undoubtedly reflect itself in keener competition and probably better prices to producers for good quality eggs next year.

LIVE POULTRY CAR LOT MOVEMENT

An interesting feature of our poultry marketing in 1924 was the increasing proportion of the crop marketed live and shipped from various country points by freight in live poultry cars. This method of marketing which was initiated by the provincial Government Egg and Poultry Marketing Service in 1922 has been adopted by practically all of the larger poultry dealers. It has the advantage of reducing the cost of transportation and thus enables the buyer to pay better prices to the producer. It seems, as well, to suit the convenience of the farmer much better than the old plan of shipping by express in small crates to Edmonton or Calgary.

The handling of poultry in live poultry freight cars was made easier in 1924 by a new regulation made by the railways which permitted the operator to load at four country points rather than two points, which was the case previously. This change contributed materially to the success of the live poultry movement this year. Credit should be given the officials of the various railways for the hearty manner in which they co-operated in the inauguration of the live poultry movement.

In 1924 our live poultry markets were considerably extended chiefly by the activity in the province of an American operator who purchased and shipped several cars to New York and Los Angeles. It was this operator's opinion that Alberta poultry has quality superior to that obtainable in many parts of the United States and that its greater stamina and vigor are reflected in a much smaller death loss when shipping long distances to market.

POULTRY

The produce houses of the province in 1924 handled approximately 5,200,000 lbs. of poultry. It is estimated that 10,400,000 lbs. were consumed on the farms. The total crop at 20 cents per lb. might therefore be valued at \$3,120,000.

The bulk of our surplus poultry is marketed in the months of November and December. Only a portion of it is fattened before dressing and the great bulk of the stock after slaughtering is frozen and shipped principally to markets in British Columbia and Eastern Canada.

It has been apparent for a number of years that the adoption of a uniform standard of grades and a uniform system of packing by our dealers would greatly enhance the value of our dressed poultry and make it possible to build up an export trade. Great Britain offers an attractive outlet providing our poultry is well fattened and packed according to a uniform standard.

Throughout the past year there has been a good deal of agitation favoring the adoption of such a standard of grades and this objective was brought appreciably nearer when, in January, 1925, a specific request was presented to the Dominion Government by the Canadian Produce Association to legalize suitable grades and enforce inspection in respect to all export shipments and grant optional inspection in respect to interprovincial shipments.

TURKEYS

Generally speaking there were as many turkeys marketed in 1924 as in 1923 though the earlier estimates indicated that the crop would be much lighter. In view of the expected shortage the early market stood at a fairly high figure, but later when the supplies were seen to be plentiful there was a drop in the price and a very slow market toward the close. Eastern distributors claim that if western shippers had been a little more conservative in their views as to price larger quantities would have gone into consumption and the crop would have cleaned up much more satisfactorily.

The Calgary Branch of the Egg and Poultry Marketing Service shipped to Montreal two cars of community killed turkeys which gave marked satisfaction. It was stated by a number of firms that this stock was better in point of quality and uniformity of pack than any other western shipment. One of the reasons for the superior quality was in the fact that the turkeys were killed on the farms or at the shipping point and suffered little or no shrinkage. When turkeys are shipped by rail live to a packing plant for slaughter they invariably lose in weight and unfortunately this loss is the final fat that gives the bird a finished appearance. It seems therefore that one effective way of conserving this finish and ensuring a fine pack is for the farmers to acquire the ability to kill their own turkeys properly and market them dressed rather than alive.

THE EGG AND POULTRY MARKETING SERVICE

The Egg and Poultry Marketing Service concluded a very satisfactory year's operations, having marketed for farmers and farmers' organizations 17,860 cases of eggs and 750,298 pounds of poultry.

An examination of the records of 1924 will indicate that our producers are neglecting an opportunity to increase their returns by fall and winter egg production when prices are best.

The following data taken from the records of the Edmonton Branch of the Egg and Poultry Marketing Service will illustrate this point.

Month	Egg Receipts	Price of Extras
January	7,000 doz.	40c
February	13,000 doz.	29c
March	35,000 doz.	19c
April	45,000 doz.	18c
May	55,000 doz.	20c
June	37,000 doz.	20c
July	27,000 doz.	22c
August	12,000 doz.	25c
September	6,000 doz.	30c
October	2,000 doz.	40c
November	1,000 doz.	47c
December	1,000 doz.	54c

The range of egg and poultry prices paid to producers through the year is given in the following table:

EGGS:	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Extras	40	29	19	18	20	20	22	25	30	40	47	54
Ones	37	26	17	16	18	17	19	21	26	35	41	49
Twos	23	19	14	13	13	12	13	15	18	23	24	29

LIVE POULTRY—Grade 1:

Fowl	11	11	11	..	..	..	11	11	9	10	9	10
Springs	13	13	13	..	..	..	20	16	14	15	15	12
Roosters	6	6	6	..	..	..	6	6	6	6	6	6
Turkeys	14	14	14	..	..	..	..	..	..	14	15	15
Ducks	12	12	12	..	..	..	12	12	12	9	9	9
Geese	12	12	12	..	..	..	12	12	12	9	9	9

Dressed poultry prices have ranged from 3 to 6c per lb. above these prices.

THE PROVINCIAL POULTRY PLANT

During the summer months the fencing on the poultry plant at Oliver was completed. Large alternate yards have been provided for most of the breeding pens.

On December 31st, 1924, the plant carried 1,407 birds of which 592 were Barred Rocks, 519 were White Wyandottes and 296 were S.C. White Leghorns. Of these 1,243 were females, a large majority of which will be used as breeders during 1925. This is the largest number of females ever carried on the plant.

During the spring the Newton Giant incubator was operated for the first season and the results were very satisfactory. The demand for the day-old chicks increases annually and from the experience of the past season the method of sending out good stock in the form of day-old chicks seems to be the most satisfactory for both buyer and seller.

The plant distributed 10,287 chicks during the season classified as follows:

Barred Plymouth Rocks	2,767
White Wyandottes	2,326
Buff Orpingtons	852
S.C. White Leghorns	3,802
Rhode Island Reds	540

10,287

In addition to this number distributed among farmers, over 2,000 chicks were kept on the plant.

The following table is compiled from the incubator records made on the poultry plant during the hatching season:

INCUBATION RECORD, 1924—PROVINCIAL POULTRY PLANT

Showing the advantage of using two-year-old and three-year-old hens rather than pullets as breeding stock.

	Hatching period	No. eggs set	Infertile	Dead germs	Chicks hatched	Cripples	Per cent. of fertile eggs hatched not including cripples
Barred Rock Hens	Mar. 12 to May 2nd	2547	360	254	1359	156	62.5
Barred Rock Pullets	Mar. 12 to May 2nd	2440	457	345	909	118	48.2
White Wyandotte Hens	Mar. 12 to May 2nd	2340	670	153	1182	41	70.7
White Wyandotte Pullets	Mar. 12 to May 2nd	2050	615	145	942	48	65.6

The eggs from the pullets were smaller than those laid by the hens, consequently the chicks were smaller when hatched, and there was a larger percentage of weaklings from the pullets' eggs.

Breeding for increased egg production is showing good results. During the past breeding season there were mated several special breeding pens of Barred Rocks and White Wyandottes. Every female in these special pens had laid over 200 eggs. To these hens were mated male birds whose dams had records of over 200 eggs.

From the progeny of these matings the most vigorous male birds will be selected to mate with the general breeding flock on the plant and it is the intention, if possible, that all male birds used in 1925 shall be birds bred from hens with records of 200 eggs or over.

During the period from November 1st, 1923, to October 29th, 1924, a pen of 10 White Wyandottes from the poultry plant competed in the Dominion egg-laying contest held at Lethbridge. The pen laid 1,790 eggs in 52 weeks. Three of the birds made very good individual records, one bird 274 eggs, it being the sixth highest bird in the contest, 300 birds competing, another 235 and the third 208 eggs.

The meeting of breeding pens and flock culling demonstrations constituted additional work handled by the Poultry Branch

at various times during the year. This service is very much in demand and appreciated and no doubt could be very profitably extended.

In conclusion I have pleasure in acknowledging the efficient services of those associated with me in the work of this Branch.

Respectfully submitted,

J. H. HARE,

Poultry Commissioner.

Report of the Director of Demonstration Farms

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the Annual Report of the Provincial Demonstration Farms for 1924.

The crops for 1924, on the Provincial Farms, in some cases, were very light. This was due to the severe drought, in some districts, during the months of June and July. The condition, in the early spring, looked favorable, as there was a lot of reserve moisture in the summerfallow and intertilled land from the previous year. Owing to the very heavy harvest of 1923 it was impossible to have fields cleaned in time to do any plowing in the early fall. With these conditions it was necessary to do most of the plowing in the spring. The land made a good seed bed, and the germination was good, the grain crop making rapid growth until checked by the dry, hot winds, and the lack of rain during the growing season.

In the Youngstown and Gleichen districts the drought was very severe, making the crops very light, with the exception of the alfalfa, which is under the irrigation system at the Gleichen Farm.

At several of our other farms, where there was rain at intervals, during the summer, we had a good yield of wheat, oats and barley.

The Olds Farm, when crop conditions looked very favorable, was visited by hail at two different occasions, which completely destroyed the entire grain crop, but with the extra moisture the oat crop revived and produced a very heavy crop of green feed.

ALFALFA

Alfalfa has been grown successfully on three of our farms in larger acreages. For a few years two of these were under the irrigation system, and one dry farming. Without the necessary moisture, in the early spring, it is impossible for this climate to produce a heavy yield, per acre, on dry farming conditions. At the Raymond and Gleichen Farms when this clover is under the irrigation systems the necessary moisture can be added in the early spring, which produces a very quick growth, and will yield from two to three crops during the season.

SWEET CLOVER

This crop did not stand the winter as well as the previous year. No doubt this cause, to some extent, was due to the heavy growth in the grain with the excess moisture of the summer of 1923, which weakened the root system, and in most cases, the

stand was very thin on the ground. This clover does not make as good pasture, or hay, when thin on the ground, as it has a tendency to grow branchy, and woody, not making a profitable crop. This clover has also been used as a silage crop for two years, and the results have been very satisfactory.

CORN

Corn has been grown successfully on a number of our farms for several years with good results. If the land is properly prepared with good deep plowing, and thorough cultivation before planting, and not planted too early in the spring, as the land must be warm so as to promote quick germination, and after well rooted with proper cultivation, corn will make very rapid growth with light sunny weather, and will produce a very heavy yield, per acre, and make one of the best crops for silage purposes.

LIVE STOCK

With the disposal of Stony Plain and Athabasca Farms, and with the market conditions, for pure-bred stock, not of the best at the present time, all of the stock was transferred to several of our other farms where plenty of feed was available. All of the flocks, and herds, made satisfactory increase during the year, with very little sickness or contagious disease. Most of our herds are of the beef type, at most of the farms, with the exception of Raymond and Vermilion. At the former mentioned farm we have a small herd of Jerseys, and Ayrshires. At the latter farm we have a herd of Dual Purpose Shorthorn cattle, which have made a very creditable record.

The following list will give the Record of Performance Test of a few of our cows:

	Milk	B.F.	Days
Royal Princess	7113	4.30	360
Barrington Duchess 31st	7283	4.46	358
Rose of Crookdake	8707	4.65	365
Golden Duchess	6607	4.37	305
Nora Director	5736	3.78	276
Cherry Blossom	6670	4.21	291
Director's Pride	7520	3.40	357
Director's Pride	6951	3.45	305
Miss Glencoe Director	7254	4.03	305

I may state that the last two mentioned are heifers in their first lactation period, and you will note that Director's Pride qualified, in the same year, in both the 305 and 365-day record in the R.O.P. Test, and with an exceptionally good record for a heifer.

STEER FEEDING

Conditions on some of our farms make it impossible to carry on steer feeding experiments this year. This is due to the scarcity of feed for this purpose. But where feed is available we are again carrying on a duplication of some of our experiments, and some of these are over a period of four years. During last winter

we carried experiments with heifer calves, one-year-old, two-year-old, and three-year-old steers. The following table will give you the results for the one year:

STEER FEEDING, 5 HEIFER CALVES: 105 DAYS' EXPERIMENT

Total weight beginning of experiment	2590 lbs.
Average weight per steer	518 lbs.
Total weight end of experiment.....	3440 lbs.
Average weight per steer	688 lbs.
Total gain in weight for group.....	850 lbs.
Average gain in weight per steer	170 lbs.
Total gain for group per day	8.09 lbs.
Average gain per steer per day.....	1.61 lbs.

COST OF FEED

2218 lbs. Oat Chop at 35c per bus.	\$22.85
1108½ lbs. Barley Chop at 40c per bus.	9.24
1375 lbs. Sweet Clover Hay at \$7 per ton	4.81
5354½ lbs. Ensilage Sunflower at \$3 per ton	8.03
Salt	.30
	45.23

COST OF FEED for group per day.....	.43.07c
Cost of Feed per head	.08.61c
COST OF PRODUCING 850 lbs. gain	\$45.23
Cost of Producing 1 lb. gain	.05.32c
Average cost per head for 105 days' experiment	\$9.04
Average weight end of 105 days' experiment	3440 lbs.
Average weight per head	688 lbs.
Gain per head	170 lbs.
Profit per head 170 lbs. at 5c per lb.	\$8.50
By value end of 105 days' experiment 3440 lbs. at 5c per lb. ...	\$172.00
To purchase price.....	103.60
Cost of Feed	45.23
Freight	3.00
	151.83

Profit	\$20.17
Profit per head	\$4.03

STEER FEEDING, 1-YEAR-OLDS: 105 DAYS' EXPERIMENT

Total weight beginning of experiment	4260 lbs.
Average weight per head	852 lbs.
Total weight end of experiment.....	5165 lbs.
Average weight per head	1033 lbs.
Gain in weight for group	905 lbs.
Gain in weight per head	181 lbs.
Total gain for group per day	8.61 lbs.
Average gain per head.....	172 lbs.

COST OF FEED for group for 105 days' Experiment:

2611 lbs. Oat Chop at 35c per bus.	\$26.87
1305½ lbs. Barley at 40c per bus.	10.88
2555 lbs. Sweet Clover Hay at \$7 per ton	8.94
10295 lbs. Ensilage Sunflower at \$3 per ton	15.44
Salt	.30
	\$62.43

COST OF FEED for group per day	.59.45c
Cost of Feed per head	.11.89c
COST OF PRODUCING 905 lbs. gain	\$62.43
Cost of Producing 1 lb. gain	.06.89c
Average cost per head 105 days' experiment	\$12.48
Average weight end of 105 days' experiment	5165 lbs.

Average weight per head	1033 lbs.	
Gain per head	181 lbs.	
Profit per head 181 lbs. at 6c per lb.		\$10.86
By value end of 105 days' experiment—		
5165 lbs. at 6c per lb.		\$309.90
To purchase price.....	213.00	
Cost of Feed	62.43	
Freight	3.20	
		278.63
Profit		\$31.27
Profit per head.....	\$6.25	

STEER FEEDING; 2-YEAR-OLDS: 105 DAYS' EXPERIMENT

Total weight beginning of experiment	5350 lbs.
Average weight per head	1070 lbs.
Total weight end of experiment.....	6185 lbs.
Average weight per head	1237 lbs.
Gain in weight for group	835 lbs.
Gain in weight per head	167 lbs.
Total gain for group per day	7.95 lbs.
Average gain per head per day	1.59 lbs.
COST OF FEED for 105 days' experiment:	
2779 lbs. Oat Chop at 35c per bus.	\$28.60
1389½ lbs. Barley Chop at 40c per bus.	11.58
4760 lbs. Sweet Clover Hay at \$7 per ton	16.66
13675 lbs. Ensilage Sunflower at \$3 per ton	20.51
Salt	.30
	\$77.65

COST OF FEED for group per day	.73.95c
Cost of Feed per head	14.79c
COST OF PRODUCING 835 lbs. gain	\$77.65
Cost of Producing 1 lb. gain	.09.29c
Average cost per head for 105 days' experiment	\$15.53
Average weight end of 105 days' experiment	6185 lbs.
Average weight per head	1237 lbs.
Gain per head	167 lbs.
Profit per head, 167 lbs. at 6½c per lb.	\$10.85
By value end of 105 days' experiment:	
6185 lbs. at 6½c per lb.	\$402.02
To purchase price.....	\$232.72
Cost of Feed	77.65
Freight	5.30
	315.67
Profit	\$86.35
Profit per head	\$17.27

STEER FEEDING; 5 3-YEAR-OLDS: 105 DAYS' EXPERIMENT

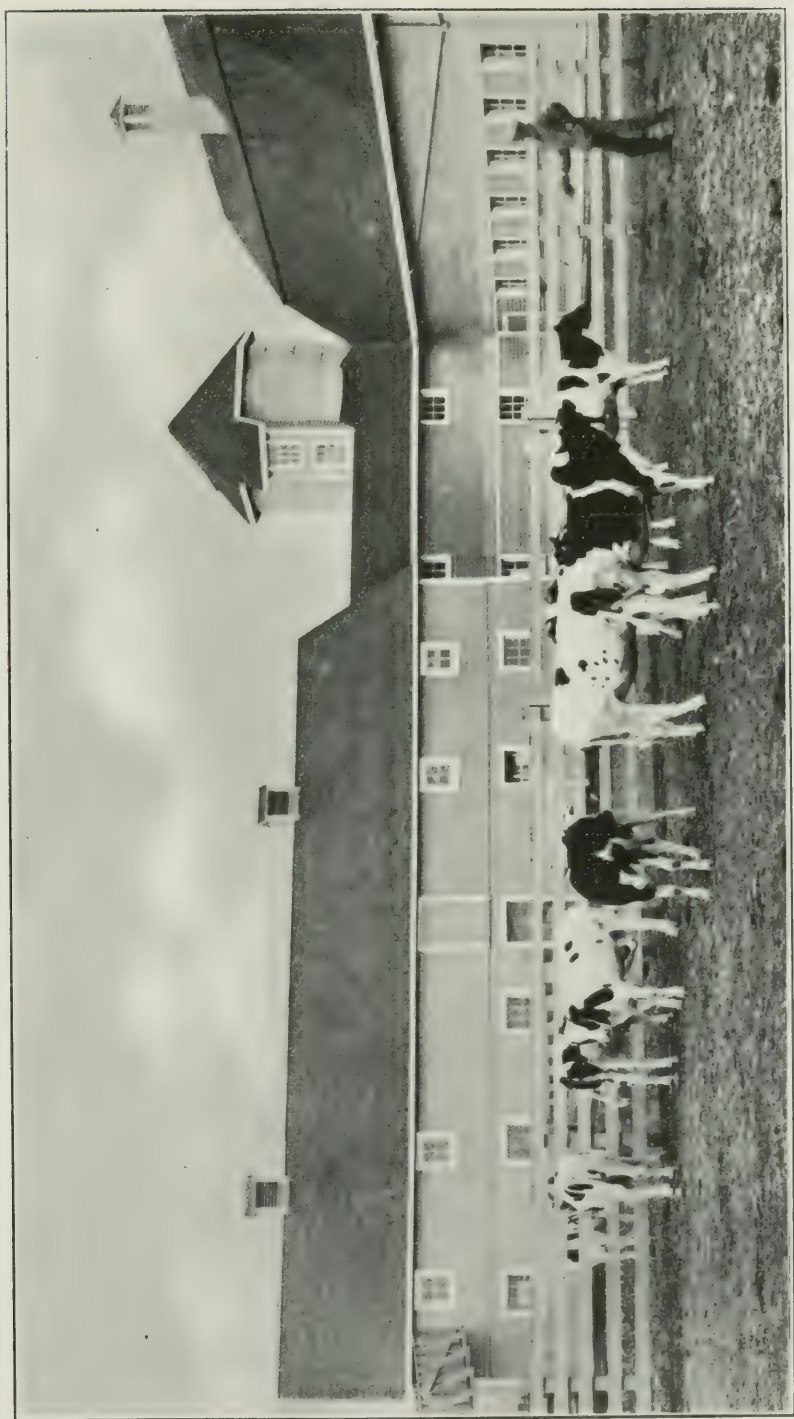
Total weight beginning of experiment	6350 lbs.
Average weight per head	1270 lbs.
Total weight end of experiment.....	7475 lbs.
Average weight per head	1495 lbs.
Gain in weight for group	1125 lbs.
Gain in weight per head	225 lbs.
Total gain for group per day	10.71 lbs.
Average gain per head per day	2.14 lbs.
COST OF FEED for group 105 days' experiment:	
3172 lbs. Oat Chop at 35c per bus.	32.65
1586 lbs. Barley Chop at 40c per bus.	13.21
5752 lbs. Sweet Clover Hay at \$7 per ton	20.13
14490 lbs. Ensilage Sunflower at \$3 per ton	21.73
Salt	.30
	\$88.02

COST OF FEED per group per day	.83.82c	
Cost of Feed per head	.16.70c	
COST OF PRODUCING 1125 lbs. gain	\$88.02	
Cost of Producing 1 lb. gain	07.83	
Average cost per head for 105 days' experiment		\$17.60
Average weight end of 105 days' experiment		7475 lbs.
Average weight per head	1495 lbs.	
Gain per head	225 lbs.	
Profit per head 225 lbs. at $6\frac{1}{2}$ c per lb.		\$14.62
By value end of 105 days' experiment—		
7475 lbs. at $6\frac{1}{2}$ c per lb.		\$485.87
To purchase price	\$292.10	
Cost of Feed	88.02	
Freight	7.00	
		387.12
Profit		\$98.75
Profit per head	\$19.75	

Respectfully submitted,

D. DOUGLAS,

Director of Farms.



DAIRY HERD AND NEW BARN ON PROVINCIAL GOVERNMENT FARM AT OLIVER, NEAR EDMONTON

Report of the Superintendent of Fairs

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to present herewith the Report of the Superintendent of Fairs for the year 1924.

Taking everything into consideration, we believe that the agricultural fairs for 1924 were an improvement upon those held the previous year. This may be accounted for by the fact that weather conditions, as a whole, were much better, and there was a feeling of optimism prevalent that was lacking in 1923.

There were eighty-three societies allotted fair dates in the province. Of these fifteen were cancelled at the request of the societies, mainly on account of the dry weather we had in the early part of the season, lack of interest, and financial conditions. This made the total number of fairs held, sixty-eight, being eleven less than 1923.

The number of live stock judges employed this year was fifty. Following up the plan adopted in 1923, we again secured the services of a number of young, recognized stockmen to judge at the fairs throughout the province. From personal observation and reports received from the societies they gave excellent satisfaction, which, I think, justifies our introduction of these young men into this work. Judges' score cards were again used, and the following is a list of societies which were given 80 per cent. or over, out of a total of 100 marks by the judges:

Brooks, Carmangay, Camrose, Didsbury, Goose Creek, High River, Highland, Lloydminster, Lethbridge, Mid-Pembina, Milner-ton, Oyen, Okotoks, Pincher Creek, Plamondon, Red Deer, Sangudo, Stettler, Vermilion and Vegreville.

The questions which appear on the judges' score cards are:

As regards Number and Quality of Livestock Entries.....	30
Quality of Grains, Grasses, Roots and Vegetables.....	10
Domestic Products and Ladies' Work.....	10
Support of Fair by Local Exhibitors.....	15
Grounds and Equipment.....	10
Interest of Public in Exhibits and Judging.....	10
Management of Fair.....	15
	100

REMARKS:—Give report in detail respecting the following: Weather, Attendance (estimate of number present). Did harvesting interfere with Fair? Was there keen competition generally? Were side-shows a prominent feature? Which breed of horses, cattle, sheep and swine predominate? What improvement would you recommend?

The executive of the Alberta Fairs Association examined the records in the Department in any way connected with the fairs of the province, with a view of eliminating any societies that were not giving service to their community; and amalgamation to take place in the districts where too many societies were operating. After a very careful study of the data before them they decided that seven societies should have their charters cancelled. This was carried out. They also wrote, through their secretary to eight societies, notifying them that unless a big improvement was made in their fair, their charter would be in danger of being cancelled. Twelve fairs were inspected and a number of amalgamations asked for. In the case of amalgamation, Griffin Creek and Bear Lake societies had their charters cancelled and a new charter issued to Berwyn, a new central point, with excellent results.

It has been decided that no personal surety bond will be accepted by the Department, and in future, all secretaries must be bonded by a guarantee bonding company.

The quality of live stock exhibits was up to the usual standard. Vegetables, grains and grasses were not so numerous as in previous years, but the quality was excellent. The numbers being affected somewhat by the late season.

Rain interfered with a few fairs, both in attendance and exhibits. Three societies were allowed to postpone their fairs on this account.

Poultry Shows:—These have been held at the following places during the winter period, with much success and considerable interest shown:

Calgary, Cochrane, Chauvin, Coronation, Eastern Alberta, Edmonton, Lloydminster, Lake Saskatoon, Lethbridge, Medicine Hat, Magrath, Oyen, Red Deer, Sedgewick, Stettler and Vulcan.

Horticultural Exhibitions:—These were held successfully at: Bellevue, Calgary, Camrose, Edmonton and Red Deer.

Respectfully submitted,

P. R. TALBOT,

Superintendent.

Report of the Game Commissioner

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR:—

I have the honour to submit the annual report of this Branch, covering the administration of The Game Act and The Prairie Fires Act for 1924.

REVENUE.

I am pleased to advise you that the revenue collected by this branch of your Department for the past year has been greatly in excess of any previous year. The total amounts to \$133,583.35, while the expenditure was \$28,441.59, leaving a surplus of \$105,141.76.

The improved showing in the amount of money collected was principally due to improved methods in the collection of the fur tax. We were successful in obtaining from this source approximately \$35,000 more than in 1923.

The demand for the various licenses and permits has been practically the same as for 1923. A greater number of resident big game licenses have been sold than in 1923, due to the reduced fee, which is now \$1.00 instead of \$2.50 as formerly.

I stated in my report for 1923 that while the collection of revenue was not generally considered as a means of protecting game, it undoubtedly has a great bearing on the matter, as the general public naturally will be more agreeable to the spending of money for this purpose if revenue secured therefrom is sufficient to offset such expenditure. It is not wise, however, to continue to exploit our wild life for the sole purpose of securing revenue, as without proper protection, extermination of species would eliminate the source of revenue.

We are fortunate in having a splendid supply of many species, but with the development of the country and the increasing population it will naturally result in a decrease from year to year. It is important, therefore, that greater efforts be put forth towards preventing unnecessary and illegal killing, and providing sanctuaries on lands unsuited for agricultural purposes. I am of the opinion that a special effort should be made more effectively to protect, not only all species of game but fur-bearing animals as well. This can only be done by maintaining a force of salaried officers sufficiently large to secure results, and while we are getting some service from the voluntary game guardians in the more settled districts, in those areas occupied by big game animals and where fur bearers are most plentiful, we have no game guardians and consequently the irresponsible hunters and trappers take advantage of this situation. You will find herewith tables showing the total

number of pelts of fur producing animals exported from the province, and their approximate value; also the pelts of fur-producing animals taken in the province of Alberta.

For several years there has been a noticeable decrease in the number of muskrat pelts and it is naturally assumed that greater protection must be given these animals if we are to maintain the supply and provide for a normal catch each year.

BIG GAME ANIMALS.

I have very little to add to my report for 1923 with respect to big game animals, there being no noticeable increase or decrease in their numbers.

Elk.—The question of the protection of the bands of elk tributary to the upper waters of the North Saskatchewan river is of immediate importance if these valuable game animals are to be allowed to increase. In no other sections of the province do these animals exist at present, and if some move is not made to secure the protection of those remaining in the above mentioned district, they will soon be extinct, insofar as this province is concerned.

GAME BIRDS.

Prairie Chicken (Sharp-tailed Grouse).—While these birds are very plentiful in some districts, very few are found in others, where they were plentiful in 1922 and 1923.

Partridge (Ruffed Grouse).—These popular game birds are noticeably less plentiful than in 1923 and it is possible that we may expect several years of scarcity before they again become numerous.

European Gray Partridge (Hungarian Partridge).—This bird is still on the increase and each year is found in new sections where they have not previously been noticed. Hunting was permitted during the season of 1924 in that portion of the province to the south of the Battle River.

For years 1906 to 1914 see previous reports.

The number of big game animals killed by licensed hunters, reported by them in accordance with The Game Act, between the years 1915 and 1924, are as follows:

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Antelope .....	.....	.....	.....	.....	.....	.....	Close season	Close season	Close season	Close season
Moose	1,116	849	1,026	900	974	1,080	1,018	913	816	.....
Caribou	34	28	43	45	52	55	68	45	50	.....
Mtn. Sheep	110	83	57	76	77	76	108	92	61	.....
Mtn. Goat	40	26	37	43	33	35	47	44	41	.....
Elk	1	.....	.....	.....	.....	1	Close season	.....	Close season	.....
Deer	692	560	705	828	851	1,047	1,120	1,180	1,083	.....

BRANDING GAME HEADS.

For years 1906 to 1914 see previous reports.

Section 11 of the Act requiring the branding of game heads before buying and selling shows the following results:

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Mtn. Sheep	15	8	6	2	14	10	7	14	11	11
Mtn. Goat .....	.....	.....	.....	.....	1	.....	.....	2	4	9
Elk	1	3	.....	.....	.....	3	1	1	1	.....
Moose	30	22	10	19	14	19	7	9	5	9
Caribou	1	1	.....	2	11	3	1	.....	.....	2
Deer	15	12	15	12	9	18	5	17	15	11
Antelope .....	.....	.....	.....	6	.....	.....	1	4	.....	.....

The following table shows pelts of wild animals exported from Alberta during the season 1923-24:

Kind	Number of Pelts	Total value of Pelts	Average Value Pelt
Badger	1,502	\$ 2,253.00	\$ 1.50
Beaver	28,736	459,776.00	16.00
Wolverine	317	4,755.00	15.00
Squirrel	410	41.00	.10
Ermine (weasel)	66,248	66,248.00	1.00
Otter	839	20,975.00	25.00
Lynx	10,453	188,154.00	18.00
Marten	18,080	452,000.00	25.00
Skunk	9,243	23,107.50	2.50
Bear	1,972	19,720.00	10.00
Fisher	281	19,670.00	70.00
Rabbit	2,421	121.05	.05
Timber Wolf	368	6,624.00	18.00
Prairie Wolf	30,514	305,140.00	10.00
Fox (blue)	39	1,560.00	40.00
Fox (silver)	994	99,400.00	100.00
Fox (cross)	6,736	235,760.00	35.00
Fox (red)	14,138	212,070.00	15.00
Fox (kit)	355	1,065.00	3.00
Fox (white)	10,868	434,720.00	40.00
Muskrat	771,238	771,238.00	1.00
Mink	48,368	483,680.00	10.00
		\$3,808,077.55	

The following table shows pelts of wild animals taken in the Province of Alberta during the season 1923-24:

Kind	Number of Pelts	Total Value of Pelts	Average Value per Pelt
Badger	1,778	\$ 2,667.00	\$ 1.50
Beaver	20,057	320,912.00	16.00
Wolverine	220	3,300.00	15.00
Squirrel	1	.10	.10
Ermine	57,962	57,962.00	1.00
Otter	367	9,175.00	25.00
Lynx	7,374	132,732.00	18.00
Marten	3,568	89,200.00	25.00
Skunk	7,733	19,332.50	2.50
Bear	1,368	13,680.00	10.00
Fisher	83	5,810.00	70.00
Fox (silver)	768	76,800.00	100.00
Fox (cross)	5,767	201,845.00	35.00
Fox (red)	11,511	172,665.00	15.00
Fox (kit)	444	1,332.00	3.00
Fox (white)	48	1,920.00	40.00
Muskrat	331,144	331,144.00	1.00
Mink	20,294	202,940.00	10.00
Prairie Wolf	32,315	323,150.00	10.00
Timber Wolf	184	3,312.00	18.00
Rabbit	44	2.20	.05
		\$1,969,880.80	

Goat	1	Deer	10
Caribou	3	Moose	28
Sheep	2	Gophers	7

CONVICTION

Penalties imposed and collected during the year 1924 amounted to \$1,948.21.

DESTRUCTION OF CROWS, MAGPIES, ETC.

I have the honour to report as follows on the "Destruction of Crows, Magpies and Gophers" as provided for by Order-in-Council 498-24.

It is generally accepted that crows, magpies and gophers are classified as vermin and as such, are a menace to agriculture. It is maintained by sportsmen that the crow is very destructive to game, song and insectivorous birds and it is well known that these birds not only destroy the young of beneficial species but the eggs as well.

While magpies are not as numerous as crows, individually they are equally as destructive.

The gopher is also destructive, more particularly to farm crops and any inducement to farmers' boys or others to encourage the destruction of these pests is unquestionably justifiable.

The competition for the destruction of these pests has proven very satisfactory. The results secured being beyond expectations. There were 1,849 competitors composed of sportsmen and school children.

The total number of birds, animals and eggs destroyed were as follows:

Crows and Magpies	Gophers	Crows' and Magpies' Eggs
44,652	220,950	107,116

Respectfully submitted,

BENJ. LAWTON

Game Commissioner.

PRAIRIE FIRES REPORT, 1924.

The prairie and forest fire situation for 1924 was much better than usual, very few fires of any size occurring, and while there was the usual number of small fires, many of which were allowed to escape from control, the conditions were such that no excessive damage resulted.

Climatic conditions during the spring and fall were not conducive towards a fire menace. The spring being somewhat late, surface moisture prevented fires from running as freely as otherwise would have been the case. The same conditions existed during the fall.

INSPECTION OF RAILWAY FIREGUARDS, 1924.

The usual inspection of railway fireguards and right-of-way was made and it is pleasing to know that the railway companies are co-operating and thereby endeavoring to eliminate the fire menace which existed some years ago due to improperly constructed fireguards and failing to clear the right-of-way of inflammable matter, and while climatic conditions in the fall of 1924 were such that in many cases it was impossible to burn the grass from the right-of-way, it is expected that this will be attended to during the coming spring and that all necessary precautions will be taken to prevent the spread of fires from railways.

The convictions reported and the total penalties imposed under The Prairie Fires Act for the years 1915 to 1924, are as follows:

Year	No. of Convictions Reported	Total	Average Fine
1915.....	39	\$ 681.16	\$17.47
1916.....	113	2,121.19	18.77
1917.....	35	888.00	25.37
1918.....	40	946.90	23.67
1919.....	35	958.50	24.55
1920.....	11	224.60	20.41
1921.....	...	445.25	.....
1922.....	44	750.00	17.04
1923.....	...	541.70	.....
1924.....	81	1,181.50	14.58

Respectfully submitted,

BENJ. LAWTON,

Chief Fire Inspector.

Report of the Director of Women's Home Bureau Service

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the Report of the Women's Home Bureau Service Branch for the year 1924.

Women's Home Bureau Service Work has developed rather differently the past year. The number of single demonstration-lectures given has diminished and the number of short courses has increased fifty per cent. Women's organizations throughout the province have thus demonstrated in a practical form their appreciation of a more stable form of adult education.

In 1924, lectures, demonstration-lectures and short courses were given to Women's Institutes, Women's Institute Girls' Clubs, United Farm Women's Associations of Alberta and a few community clubs. In some cases other organizations have added their names to the applications made by these organizations in order to strengthen the application from that district. The subjects dealt with were food values and the cooking and preparation of foods, household administration in its various branches, sewing, millinery, basketry, child welfare, home nursing and treatment in emergency.

DEMONSTRATION AND LECTURE WORK

The arrangements made for carrying on this work are as follows: The Department of Agriculture provides the lecturer or demonstrator, paying her travelling expenses and sustenance allowance. The local organizations undertake to advertise the lecture, demonstration-lecture or short course. They provide the place of meeting and some of the equipment, where equipment is required.

Home Bureau Service work was carried on during every month of the year, the greater part being done during the summer months.

No. of Foods and Cookery Short Courses.....	9
No. of Demonstration-lectures given.....	4
Total attendance at meetings.....	834
Average attendance.....	27
No. of Household Administration Short Courses.....	7
No. of Demonstration-lectures given.....	3
Total attendance at meetings.....	513
Average attendance.....	24
No. of Sewing Short Courses given.....	42
No. of Demonstration-lectures given.....	5
Total attendance at meetings.....	3781
Average attendance.....	25

No. of Millinery Short Courses given.....	74
No. of Demonstration-lectures given.....	11
Total attendance at meetings.....	5,549
Average attendance.....	27
No. of Basketry Courses given.....	30
No. of Demonstration-lectures given.....	1
Total attendance at meetings.....	2,824
Average attendance.....	31
No. of Health Courses given.....	6
No. of Demonstration-lectures given.....	4
Total attendance at meetings.....	391
Average attendance.....	18
Total attendance at all Short Courses.....	11,790
No. of Single Demonstration-lectures given.....	30
Total attendance at Demonstration-lectures.....	945
No. of Lectures given.....	9
Total attendance at Lectures.....	467
Average attendance at Demonstrations and Lectures.....	36
Total attendance at Short Courses, Lectures and Demonstrations...	13,202
No. of places visited.....	200
No. of Meetings held.....	782
No. of Constituency Conferences held.....	38
Total attendance at Constituency Conferences.....	2,467
No. of District Conferences held.....	1

Sewing courses have been held for three and five days. In some cases organizations have asked that these courses be repeated the following year in their district to enable the students to go on improving their work.

Millinery courses have been carried on for three and five days. These courses have been very popular and many women who were formerly afraid of spoiling their hats if they moved a tack or flower are now making their own hats.

Basketry courses have been carried on for three days and have been found to be not only interesting but also of practical value. So much interest has been shown in the making of trays and baskets that there seems to be no reason why some small articles of furniture should not be made by students who care to go into more advanced forms of this work.

Household administration course includes: Housekeeping, financing, house furnishing and decoration, scientific grouping of kitchen utensils, labor-saving devices and sanitation, special attention being given to the teaching of how to care for and protect the drinking water supply.

Close co-operation has been maintained with the health department. In this way, the two Departments avoid overlapping wherever possible. The Department of Health and our own Department put on joint baby clinic work in one constituency. A nurse from the Department of Health gave lectures and demonstrations to various organizations on home nursing and treatment in emergency. The applications for this work that we dealt with came directly to this branch.

Extracts from letters dealing with some of the subjects show now the work appeals to and helps our women in different parts of the province.

1. *Household Administration*.—"We wish to inform you of our hearty appreciation of the demonstrator's lectures. We have never before had a demonstration which roused so much enthusiasm as this one. Everything the demonstrator did was interesting and helpful to the last touch, and together with her charming personality, she made three of the most interesting days in the history of the Women's Institute."

2. *Home Nursing and Emergency Treatment*.—"In August a demonstrator visited our Institute and gave a demonstration on the making of a sick bed, bathing a patient in the bed, and changing the bed with the patient in it. She also gave us a talk on the use of home remedies, such as salt and mustard. There was a good attendance and we found the demonstrator's lectures and demonstrations very interesting and practical."

3. *Dressmaking Course*.—"Our women are delighted with the three-day dressmaking course you have given us this year. We were all sorry when it was over. The Town Hall was a very popular resort for all our women during those days, while Saturday found us carrying chairs from the nearby houses to accommodate the crowd. One and all are very enthusiastic in their praise of the demonstrator. She is so painstaking, so patient and untiring in explanation of difficulties, so generous of her time, while her methods were so simple and practical."

4. *Basketry Course*.—"The demonstrator finished the basketry demonstration today and the class of ten ladies and girls enjoyed it immensely. We made some very nice baskets under her direction and we enjoyed the demonstrator both as an instructor and for her nice ways. We feel we would like to have her again at some future time."

5. *Millinery Course*.—"We were very pleased with the demonstrator and when I tell you that some of us had not had a new hat five years you can understand what it means to us to get such an opportunity. I had never attempted to make a hat and I made one that I am quite proud of. It cost me \$2.80 and I am sure I couldn't buy one like it at a millinery store for less than \$9.00. We are having a special meeting this week to vote and see if we can't have the demonstration again next year."

An effort is being made by the Department and the organizations receiving assistance from this branch to co-operate in the work by organizing more fully in districts. A letter was sent out to the Directors of the Women's Institutes and the United Farm Women of Alberta asking if it would be possible to put on one type of work in each constituency each year. Such a method would make for efficiency, as through time, each district would receive a systematic course on the various subjects. Such an arrangement would also enable the organizations to receive the greatest benefit

from the money set aside for this work. It will take time to get this re-organization on to a satisfactory basis, but already there are indications that during 1925 an effort will be made to carry out the suggestion.

At the close of 1923 a questionnaire was issued to organizations asking them to choose from a list of subjects the type of work they wished to study in 1924; also the time of year at which they could do the work best. This questionnaire has been found to be very helpful to the organizations and the Department. A questionnaire has therefore been issued on similar lines for the work of 1925.



RURAL CLASSES IN MILLINERY CONDUCTED UNDER THE AUSPICES OF THE WOMEN'S HOME BUREAU SERVICE OF THE DEPARTMENT OF AGRICULTURE.

Since starting this report, I have received a letter from Mrs. Boyd, of Vanrena, telling of work being done in a part of the Peace River country. As you are all very much interested in this country I am going to quote part of her letter in this report:

"I have been intending to write and tell you of our hospital activities for some time, but waited until we had a 'going concern' to tell you about. There has never been any hospital accommodation in this locality, the nearest being at Peace River, 54 miles distant. Every organization here (the W.I. among them) has been trying for years to get some assistance in starting a hospital, but although we tried Red Cross, Methodist Mission Board, etc., it

was all in vain. The Municipality felt it would be very unwise to undertake the charge of a Municipal hospital at this time, taxes being high enough now. This summer the Women's institute came to the conclusion that something had to be done, and they might as well get busy and do it. Among the members there is a most efficient and highly trained nurse, one who has specialized in surgery, and had four years' experience overseas during the war, and is also a splendid maternity nurse. This lady offered, if we found and equipped a building for a hospital, to take charge of it and run it for us, depending on the patients' fees for her salary, this being the only way in which we could have undertaken what we have done. You will remember Mrs. Shearer's home, where we had such splendid meetings of the Girls' Club at Waterhole. This place was vacant, so we rented the building for six months with the option of purchasing at the end of that time, made the necessary alterations, and bought furnishings and equipment for a four-bed hospital. We finished an outside summer kitchen, and made a nice little sitting room, also a bedroom for the nurse. The large living room we divided, and there is a hall with two rooms off, one of which holds two beds, the other is an operating room. There is besides, another two-bed room, and a kitchen. We also installed a telephone. All of which cost us over \$400.00, which we were able to pay down. Now, being Scotch, I've no doubt you have often been told, (as I have) that the 'Lord helps those that helps themselves,' and in this case we have found it true. We had not intended to ask the Municipal Council for any assistance, but it was strongly hinted to us that all we needed to do was to ask for a grant and we would get it. We did so, and they responded very graciously giving us a grant of \$500.00, which we are anxious to save, and apply towards the purchase price in the spring. The hospital has been open for three weeks, and already there have been five operations, which goes to show how very necessary it is that we have such a place. I may say that this work has been undertaken entirely by the Fairview Branch of the Women's Institutes, and I need not tell you that we are very proud of our little hospital. We have had many kind words of appreciation from many people. When we interviewed the Council the Reeve said that they realized as much as we did, the great need for a hospital, and that ours was the best plan that had been put before them."

The above letter illustrates very clearly the wonderful work of the Women's Organizations in community life. The establishment of this hospital accommodation might have been delayed for years if the Fairview Branch of the Women's Institutes had not solved the problem.

IMMIGRATION ADVISORY COMMITTEE

In April of this year the Minister, Hon. George Hoadley, authorized the formation of an Advisory committee on Women's Immigration. For some time reports had been received from various sources telling of women coming to the province and having no one call on them for months. It was felt that such a state of affairs did not make for the health and happiness of the new com-

ers or for the good of the community as a whole. At the same time it was recognized that it was better to ask for the co-operation of organizations already doing work throughout the province rather than to attempt to establish another society. The committee consists of five members:

- A representative from the U.F.W.A.
- A representative from the Women's Institute.
- A representative from the Local Council of Women.
- A representative from the Press.
- A representative from the Government.

Through the various agencies local committees are being established all over the province. These committees undertake to see that newcomers are called on when they come to the district and thus as far as possible are made to feel welcome in their new surroundings. These committees are not asked to undertake any financial responsibility for these people, nor are they asked to undertake propaganda work in the interests of immigration. At times they may be asked to give some information in connection with their districts and to advise as to the suitability of homes to receive women and girls for domestic work. At present their main work is to extend a kindly welcome to newcomers.

LOAN COLLECTION AND TRAVELLING LIBRARIES

The Women's Home Bureau Service loan collection, which is composed of reference books, bulletins, pamphlets and clippings from magazines and newspapers, covers a vast range of subjects. This material is not only available for women and their organizations, but for anyone resident in the Province of Alberta. This year, by special request, material was loaned in British Columbia and Ontario.

The Women's Home Bureau Service endeavors to keep in touch with all available sources of information. We are on the mailing list of many of the Universities of Canada and the United States. In this way we receive the most recent and authoritative information on rural community interests, educational topics, social questions of the day and home economic problems.

During the year of 1924, 2,820 reference books and clippings were sent out from the loan collection. Eighty-five Women's organizations received traveling libraries during the year.

WOMEN'S INSTITUTES AND WOMEN'S INSTITUTES GIRLS' CLUBS.

There are 269 Women's Institutes in the province and 40 Women's Institute Girls' Clubs. These organizations are continuing work vigorously along social, educational, health and community lines.

In conclusion, I have much pleasure in acknowledging, with thanks, the efficient services rendered by those associated with me in the work of this branch.

Respectfully submitted,

JESSIE C. MACMILLAN,
Director.

Report of the Publicity Commissioner

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to present herewith the report of the Publicity Branch for the year 1924.

As in the previous two years, this branch in 1924 had jurisdiction over general publicity work, the motion picture bureau, agricultural exhibits and crop reports and statistics, in connection with all of which I have to report as follows.

GENERAL PUBLICITY WORK

During the year there was a very large increase in the demand upon the branch for all classes of information. More than 3,000 enquiries by letter were handled by the branch, a large majority of which were from points outside the province, indicating a keener interest in our resources and in the opportunities afforded here for settlement. The Empire Exhibition at Wembley stimulated interest in Great Britain and Northern Europe, with the result that many enquiries for information were directed from those countries.

It can be stated without question that the prospect of an increased immigration to the province is brighter than for some years. During 1924 more than 10,000 new residents entered the province, according to figures obtained from the immigration department at Ottawa, and the indications are that many more will come during the 1925 season.

During the year a great deal of publicity material for newspapers and periodicals was sent out, the demand for such material showing a considerable increase. The weekly news bulletin inaugurated in 1922, was continued, with an increased circulation among newspapers and other agencies, an aggregate number of nearly 20,000 being distributed during the year. These bulletins contained up-to-date information on the province prepared in news form, and very wide use was made by many publications of the material thus furnished. The bulletin is circulated weekly to publications in Canada, the United States and Great Britain. It is also extensively used by our own Alberta papers.

In this connection it is in order to comment upon the splendid endeavor recently made by the Alberta daily and weekly papers to set forth in concise form the progress of the province in agricultural and other lines during the past 18 years. This was done by the publication, in part or in whole, by practically all the papers of the province, of a page-length article, much of the material for which was supplied from this office, and which was prepared under the direction of officials of the Alberta Press Association.

Early in the year a new well-illustrated handbook on Alberta was prepared, with information of the province in concise form. A total of 60,000 of this booklet was distributed during the year, chiefly at the Empire Exhibition at Wembley and through agencies in Great Britain, and the United States. In addition to this, some 15,000 copies of the large Alberta book, and 8,000 copies of the special publicity map were also distributed. Weekly supplies of this literature were sent throughout the year to all Canadian Government agents in United States and Great Britain, for which the branch received grateful acknowledgment, the literature proving very useful to these agents in meeting enquiries concerning Alberta. Many of the Alberta books were also sent out in reply to individual enquiries, an interesting feature in this connection being the large number of requests received from school centres throughout the United States, where a greater study is now being made of Western Canada.

The distribution of photographs proved also a useful medium of publicity, and a large number was sent to various publications and to journalists for use in illustrating articles on Alberta. Several sets of albums of views of the province were also supplied to Canadian agencies in the United States and Great Britain.

Considerable advertising was carried in British publications during the Wembley exhibition, notably in the Manchester Guardian Empire number. All of the publications gave generous and prominent space to articles on Alberta, and large numbers of copies were distributed to exhibition visitors.

During the exhibition also a set of seven reels of motion pictures on Alberta prepared by this branch was shown in the Canadian National Railways building through the courtesy of the officials of the colonization department of that railway. These pictures were the first distinctively Alberta motion pictures to be exhibited abroad, and were witnessed by an estimated total of more than 100,000 people at Wembley. The pictures included views of the four cities of the province, several reels of farming and ranching activities, and two reels on coal mining. The pictures are now being used in Britain and on the continent for lecturing purposes, and another set of the pictures taken abroad by Hon. Mr. Hoadley, is being used for the same purposes throughout Britain.

A large number of visitors called at the office during the year, including writers for periodicals, all of whom were extended courtesies and provided with information.

General co-operation was given the federal publicity bureau and the publicity and colonization bureaux of the railway companies in supplying information.

MOTION PICTURE BUREAU

The chief effort of the motion picture bureau during the year was the preparation of the motion pictures for use overseas. In addition to this, for publicity purposes, a reel was made up during

the summer of pictures of the tar sands at Waterways, of scenes along the Athabasca and Clearwater rivers, and of scenes in the Peace River district. It was hoped to make this picture more complete in the near future.

In addition to the above work, an entirely new picture on the operation of the agricultural schools was completed for use throughout the rural districts to create keener interest in the schools, a picture was made on noxious weeds and their eradication, and also one on the growing of registered seed, including scenes taken at the government's cleaning and grading plant in Edmonton. Work was also done on other pictures being made for educational purposes. Motion picture machines are now in the hands of the department's agricultural representatives at various points as well as at the schools of agriculture at Olds, Claresholm and Vermilion. In this connection a total of 390 separate reels of educational pictures were in circulation during the year for use at meetings and short courses, the pictures being used at many points in the province.

On the occasion of the visit of H.R.H. the Prince of Wales to the province in October last, this branch was able to procure interesting motion pictures of the royal rancher on his ranch at Pekisko, which were added to the Department's motion picture on ranching.

Towards the close of the year a request was received from the Director of Visual Education for Chicago schools for the loan of this branch's motion pictures on ranching and of the north country. This request was complied with, and these pictures at present are being shown to the pupils in the schools of Chicago. (The technical work in connection with the bureau is in charge of Mr. A. W. Foley.)

AGRICULTURAL EXHIBITS

In spite of the unfavorable crop season in 1924, Mr. Frank Peterson, who has given such excellent service in the work of collecting and curing grains for our agricultural exhibits, was able to collect many very fine samples of all grains.

In the early part of the year a considerable quantity of such material was supplied to the Canadian exhibit at Wembley for Alberta's portion of that exhibit. An agricultural exhibit was also shown at the provincial seed fair in January, which was a replica of that shown the previous December at the Chicago international hay and grain show. This exhibit was also shown at the Eaton agricultural products exhibition in Winnipeg.

CROP REPORT AND STATISTICS

In March last Mr. F. G. Forster, Assistant Publicity commissioner who was in charge of the statistical work of the branch, left to take a position with the liquor control board. No appointment has yet been made in his place. Toward the close of the year Mr. C. S. McConna retired as clerk in charge of threshers' licenses, and his place has been taken by Mr. R. H. Morrison.

The practice of issuing fortnightly crop reports during the crop season was continued, and a considerable increase in the demand for these reports was noted.

THE CROP SEASON

The crop season of 1924 must be classed as unsatisfactory from the standpoint of yields, but most gratifying from the standpoint of prices received. Though soil conditions were good at the beginning of the season, the late spring, characterized by heavy falls of snow, retarded work on the land, and seeding was not commenced in central and northern districts until towards the end of April. In the south seeding commenced somewhat earlier. A good supply of moisture was carried over from the winter in most of the central and northern districts, but in the south-eastern districts, soil conditions were very dry, the snowfall during the winter having been light. Seeding was completed in the province during the last week in May. Sharp frost occurred about the 19th of May in several districts, but no damage was reported.

Backward weather conditions retarded growth of the new crop considerably during the early part of the season, and later on, very warm, dry weather with light, scattered precipitation created drought conditions in a considerable portion of the province, resulting in patchy growth and a generally disappointing state of the crops. Late in July it became evident that the production for the season would be below average. The districts most favorable appeared to be the south-western crop district where rains had been more generous, and growth of grain sturdy, and certain sections of the central crop districts where the late crop benefitted from later rains.

Between September 19th and 26th, heavy frosts occurred which tendered to lower the grade of the grain in several districts.

Harvesting operations commenced about August 20th. Over a considerable area in the eastern part of the province grain headed out early and the yields were light.

In the south-western district some heavy crops of grain were realized, and in the central and northern sections where late rains and cool weather had aided the filling out process, the harvest indicated somewhat more satisfactory returns than were at first anticipated.

Late in October, however, threshing operations over most of the province were interrupted by heavy falls of snow which were followed almost immediately by winter conditions making it impossible to complete threshing in a great many districts. This condition prevailed until the close of the year, and many farmers were unable to get their grain threshed until milder weather came.

This fact has made it very difficult to estimate the yields of the various grains for the province, since many threshing returns have not yet been received.

The total acreage sown to wheat was estimated at 5,573,813 acres, and the average yield at 11 bushels, giving a total yield of approximately 61,000,000 bushels. The average price received by the farmer over the season has been estimated at \$1.20 per bushel, as compared with 65 cents in 1923. The fact that a considerable area in oats was left as greenfeed which but for the early winter conditions would have been threshed, is responsible for the increase shown in greenfeed and grain hay in the accompanying statement.

Attached to this report are statistical tables showing the agricultural production of 1923 and 1924, the average yields over a period of years, the live stock shipments, temperature and precipitation figures for the various districts, and other statistical information.

NEW CROP MAP

In agreement with the Dominion Bureau of Statistics, this branch has prepared a new crop district map for use in future, in which the crop districts will be based on a grouping of federal census division instead of provincial political ridings. The census divisions are made up of groupings of municipal units, whose boundaries are fixed. The advantage of such a change is that the boundaries of the crop districts, of which there will now be eight, will be on a more permanent basis, and the statistics thus compiled more easily checked with federal statistics. It is presumed also that when the municipal units are more fully organized, they will be made the basis of collection of statistics, in which case the census divisions will be the proper basis for crop returns.

CORRECTION IN 1923 WHEAT YIELDS

Following investigation of the actual returns for loadings of wheat for the year 1923-24 crop shipping season, as shown by figures available in the internal trade branch of the federal bureau of statistics, it became apparent that the estimate of the wheat yield for 1923 made by the federal bureau in conjunction with the provincial department was too high by 22,000,000 bushels. It was admitted that the provincial department's estimate of average yield at 28 bushels was not too high, therefore it was apparent that the error had occurred in computing the total acreage in crop. It has been decided by the federal bureau of statistics in agreement with the Provincial Department of Agriculture that the acreage figures for 1923 wheat should be reduced to correspond with the reduction shown in the total yield of approximately 22,000,000 bushels. This correction has been made, as will be noted in the accompanying table. The wheat acreage figures for 1924 have been brought into line with this correction.

In this connection it may be stated that the method used to ascertain the acreage in crop is the distribution of schedules early in the crop season to farmers through the medium of school districts. These schedules are prepared by the federal bureau, and

this office co-operated in their distribution. The schedules are returned to this office, sorted into crop districts, and forwarded to Ottawa for compilation. The weakness in this method lies in the fact that a very small proportion of the farmers return the schedules. In 1924 a total of 60,000 schedules were distributed, and less than 13,000 returns received. It is obvious, therefore, that some better method must be devised of estimating the acreage in crop, but until it is possible to bring into use the municipal unit as the basis of compiling these statistics, whereby more complete returns can be obtained, it is doubtful if much improvement can be made on the present system.

Respectfully submitted,

COLIN G. GROFF,

Publicity Commissioner.



ALBERTA CROP DISTRICTS

No. 1—SOUTH-EASTERN DISTRICT—Comprising Provincial Constituencies of Medicine Hat, Taber, Warner, Redcliff, Bow Valley, Hand Hills, Acadia and Coronation.

No. 2—SOUTH-WESTERN DISTRICT—Comprising Provincial Constituencies of Cardston, Pincher Creek, Macleod, Lethbridge, Little Bow, Claresholm, Nanton, Okotoks, High River, Rocky Mountain, Calgary, Gleichen and Cochrane.

No. 3—EAST-CENTRAL DISTRICT—Comprising Provincial Constituencies of Stettler, Camrose, Sedgewick, Ribstone, Wainwright, Vermilion, Alexandria, Beaver River, and St. Paul.

No. 4—WEST-CENTRAL DISTRICT—Comprising Provincial Constituencies of Didsbury, Olds, Innisfail, Red Deer, Lacombe, Ponoka, Wetaskiwin, Leduc, Edmonton, South Edmonton, Victoria, Pembina, Lac Ste. Anne, Stony Plain, and Edson.

No. 5—NORTHERN DISTRICT—Comprising Provincial Constituencies of Athabasca, Grouard and Clearwater.

No. 6—PEACE RIVER DISTRICT—Comprising Provincial Constituency of Peace River.

ESTIMATED GRAIN YIELDS BY CROP DISTRICTS, ALBERTA, 1924

FALL WHEAT

Crop District	Total Estimated Acreage	Estimated Average Yield	Estimated Total Yield
District No. 1.....	5,500	6 ¹ / ₂	35,750
District No. 2.....	6,861	17	116,637
District No. 3.....	6,800	6	40,800
District No. 4.....	3,457	17	58,669
District No. 5.....	.....	.....	.....
District No. 6.....	1,000	9	9,000
Community Farms.....	.....	.....	.....
Indian Reserves.....	643	9	5,787

SPRING WHEAT

District No. 1.....	2,108,650	6	12,651,900
District No. 2.....	1,145,639	17	19,475,863
District No. 3.....	1,207,285	10	12,072,850
District No. 4.....	959,708	16	15,355,328
District No. 5.....	14,687	16 ¹ / ₂	242,335
District No. 6.....	105,124	11	1,156,364
Community Farms.....	.....	.....	.....
Indian Reserves.....	8,459	10 ³ / ₄	90,934

OATS

District No. 1.....	300,000	20	6,000,000
District No. 2.....	314,166	34 ¹ / ₂	10,838,727
District No. 3.....	451,229	26	11,731,954
District No. 4.....	688,554	35	24,099,390
District No. 5.....	17,423	42	731,766
District No. 6.....	70,342	26	1,828,892
Community Farms.....	.....	.....	.....
Indian Reserves.....	5,918	34	201,212

BARLEY

District No. 1.....	49,187	17	836,179
District No. 2.....	82,568	23	1,899,064
District No. 3.....	99,827	17	1,697,059
District No. 4.....	244,933	31	7,592,923
District No. 5.....	2,676	26	69,576
District No. 6.....	14,700	17	249,900
Community Farms.....	.....	.....	.....
Indian Reserves.....	827	30	24,810

RYE

District No. 1.....	108,577	4	434,308
District No. 2.....	41,208	18	741,744
District No. 3.....	60,947	9	548,523
District No. 4.....	51,027	15	765,405
District No. 5.....	2,380	21	49,980
District No. 6.....	10,233	20	204,660
Community Farms.....	.....	.....	.....
Indian Reserves.....	.....	.....	.....

FLAX

District No. 1.....	9,550	5	47,750
District No. 2.....	3,580	5	17,900
District No. 3.....	1,238	5	6,190
District No. 4.....	467	7	3,269
District No. 5.....	12	18	216
District No. 6.....	153	6	918
Community Farms.....	.....	.....	.....
Indian Reserves.....	.....	.....	.....

COMPARATIVE STATEMENT OF AGRICULTURAL PRODUCTION 1923 - 1924

CROP	ACREAGE		YIELD PER ACRE BUSHELS		TOTAL YIELD BUSHELS		PRICE		VALUE	
	1924	1923	1924	1923	1924	1923	1924	1923	1924	1923
GRAIN CROPS										
Wheat	5,573,813	5,172,643	Bush.	Bush.	61,311,943	144,834,000	\$1 20	\$0 65	\$ 73,574,331 60	\$ 94,142,100 00
Oats	1,847,632	2,299,546	30 00	28 00	55,428,960	114,977,300	41	28	22,725,873 60	32,193,644 00
Barley	494,718	383,853	25 00	38 50	12,367,950	14,778,533	60	38	7,420,770 00	5,615,842 00
Rye	274,372	396,758	10 00	19 19	2,743,720	7,616,030	95	43	2,606,534 00	3,274,892 00
Flax	15,000	15,000	5 00	10 40	75,000	156,000	1 85	1 63	139,250 00	254,280 00
Mixed Grains	13,445	11,228	30 00	41 75	403,350	468,769	45	28	181,507 50	131,255 00
Peas	1,659	3,306	12 00	22 00	19,908	72,732	2 00	1 63	39,816 00	102,552 00
Beans	461	559	12 00	11 00	5,532	6,149	2 00	1 41	11,064 00	12,298 00
	8,221,106	8,282,893			132,356,363	282,909,513			\$106,699,146 70	\$135,726,863 00
ROOTS, ETC.										
Potatoes	31,660	39,960	Cwt.	Cwt.	2,944,380	4,755,420	95	60	2,797,161 00	2,853,144 00
Turnips	6,602	9,245	100 00	114 00	660,200	1,053,930	1 25	1 00	825,250 00	1,053,930 00
	38,262	49,205			3,604,580	5,809,170			\$ 3,622,411 00	\$ 3,907,074 00
FODDER CROPS										
Grain Hay	2,427,303	1,861,033	Tons	Tons	4,854,606	4,187,324	9 00	3 00	43,691,454 00	12,561,972 00
Hay and Clover	257,000	245,178	1 50	1 65	385,500	404,543	10 00	6 00	3,855,000 00	2,427,258 00
Alfalfa	39,812	38,548	2 50	1 70	99,530	104,079	14 00	10 00	1,393,420 00	1,040,790 00
Fodder Corn	67,472	53,953	4 00	4 65	269,888	250,881	5 00	3 00	1,349,440 00	752,643 00
Sunflowers	16,065		10 00		160,650		3 00		481,950 00	
	2,807,652	2,198,712			5,770,174	4,946,827			\$ 50,771,264 00	\$ 16,782,663 00
Total acreage	11,067,014	10,530,810							\$161,092,321 70	\$156,416,600 00

Value of Yields.

OTHER PRODUCE				Lbs.		Lbs.		Lbs.		Lbs.	
				1924	1923	1924	1923	1924	1923	1924	1923
Honey				55,000		100,000		100,000		13,750	00
Alfalfa Seed				100,000		100,000		100,000		30,000	00
Wool				678,463						223,892	79
										30,000	00
										326,500	00
DAIRY PRODUCTS				No. Creameries		Total Production, Lbs.		Price Lb.		Value	
				1924	1923	1924	1923	1924	1923	1924	1923
Creamery Butter	89	75	22,335,000	17,750,000	31.5	32.25	\$7,035,40	00.0	\$5,724,375	00	
Cheese	13	13	1,714,790	1,850,000	15.7	19.25	279,887	00	356,125	00	
Other Dairy Products							15,893,275	00	16,894,500	00	
										23,208,562	00
										22,975,000	00
Poultry Products										8,916,000	00
Animals Slaughtered and Sold										20,772,593	74
Game and Furs										2,000,000	00
Horticultural and Garden Products										1,500,000	00
										2,000,000	00
										8,300,000	00
										17,146,000	00
										2,000,000	00
										2,000,000	00
										\$209,194,100	00

LIVE STOCK, ALBERTA, (Figures as at June 30, 1924)

	NUMBER		VALUE PER HEAD		VALUE	
	1924	1923	1924	1923	1924	1923
Horses	875,923	844,519	\$40 00	\$40 00	\$ 35,036,920	\$ 33,780,766
Milch Cows	434,237	411,446	60 00	50 00	26,054,220	20,572,300
Other Cattle	1,195,578	1,117,751	30 00	30 00	35,867,340	33,532,530
Sheep	206,458	335,243	10 00	8 00	2,064,580	2,681,944
Swine	1,016,380	706,753	16 00	16 00	16,262,080	11,308,048
POULTRY:—Turkeys	593,938	580,510	1 75	2 50	1,039,392	1,451,275
Geese	112,758	93,650	1 50	2 00	169,137	187,300
Ducks	119,125	98,457	.85	1 25	101,256	123,071
Other Fowl	5,658,960	5,860,028	50	1 00	2,829,480	5,860,028
					\$ 119,424,405	\$ 109,497,256

SUMMARY OF THE ACREAGE AND YIELDS OF THE LEADING GRAINS
DURING THE LAST TEN YEARS
1915 - 1924

	Year	Crop Area	Total Yields in Bushels	Yield per Acre Bushel	Average Yield Bushel
Spring Wheat.....	1924	5,549,552	61,045,072	11.00	16.73
	1923	5,126,643	143,546,004	28.00	
	1922	5,701,041	64,991,867	11.40	
	1921	4,564,290	51,576,000	11.30	
	1920	4,035,003	82,712,738	20.50	
	1919	2,827,935	33,935,224	12.00	
	1918	3,018,371	23,090,544	7.65	
	1917	2,622,853	51,805,839	19.00	
	1916	1,549,075	41,163,471	24.18	
	1915	1,637,122	58,830,704	33.29	
Winter Wheat	1924	24,261	266,871	11.00	19.23
	1923	46,160	1,292,480	28.00	
	1922	64,554	748,826	11.60	
	1921	85,114	1,468,000	17.25	
	1920	37,990	712,777	18.76	
	1919	38,475	639,450	16.62	
	1918	44,065	660,975	15.00	
	1917	51,704	1,023,173	20.00	
	1916	18,663	447,475	23.89	
	1915	31,954	1,257,985	39.37	
Oats	1924	1,847,632	55,428,960	30.00	34.60
	1923	2,299,546	114,977,300	50.00	
	1922	1,614,500	34,711,750	21.50	
	1921	2,139,743	64,192,000	30.00	
	1920	3,089,757	115,079,241	37.25	
	1919	2,329,025	65,725,085	28.22	
	1918	2,651,548	60,322,717	22.75	
	1917	2,667,291	85,726,170	32.14	
	1916	1,394,927	60,798,239	43.78	
	1915	1,570,596	90,582,694	57.66	
Barley	1924	494,718	12,367,950	25.00	24.94
	1923	383,858	14,778,533	38.50	
	1922	378,053	5,632,989	14.90	
	1921	523,891	11,657,000	22.25	
	1920	480,666	12,740,071	26.50	
	1919	412,212	10,562,406	25.50	
	1918	470,073	7,756,204	16.50	
	1917	462,726	9,984,789	22.56	
	1916	297,967	8,477,232	28.64	
	1915	374,062	12,761,187	34.11	
Rye	1924	274,372	2,743,720	10.00	14.84
	1923	396,758	7,621,674	19.19	
	1922	422,500	4,351,750	10.30	
	1921	138,836	1,999,000	14.40	
	1920	160,959	3,419,969	21.25	
	1919	83,032	1,173,256	14.13	
	1918	47,877	825,875	17.50	
	1917	29,997	764,828	26.00	
	1916	10,134	212,503	23.25	
	1915	12,067	291,399	24.14	

SUMMARY OF THE ACREAGE AND YIELDS OF THE LEADING GRAINS
DURING THE LAST TEN YEARS

1915 - 1924

(Continued)

	Year	Crop Area	Total Yield in Bushels	Yield per Acre Bushel	Average Yield Bushel
Flax	1924	15,000	75,000	5.00	6.98
	1923	15,000	156,000	10.40	
	1922	22,186	98,727	4.45	
	1921	28,434	171,000	6.00	
	1920	103,689	725,910	7.00	
	1919	47,112	221,897	4.71	
	1918	95,920	479,600	5.00	
	1917	139,527	777,690	5.60	
	1916	43,361	574,700	12.43	
	1915	41,243	569,762	13.57	
Mixed Grains	1924	13,445	403,350	30.00	29.00
	1923	11,228	468,769	41.75	
	1922	14,314	214,710	15.00	
	1921	13,013	278,780	21.50	
	1920	8,398	258,238	30.75	
	1919	26,000	942,500	36.25	
Hay and Clover ...			Tons.	Tons.	Tons.
	1924	257,000	385,000	1.50	1.18
	1923	245,178	401,600	1.65	
	1922	291,723	234,400	0.80	
	1921	454,883	454,883	1.00	
	1920	433,296	476,626	1.10	
	1919	403,333	524,462	1.30	

GRAIN PRODUCTION IN ALBERTA—1906 TO 1924

Showing Acreage under Cultivation, Yields, and Value. Department of Agriculture, Alberta, Publicity and Statistical Branch

Year	Wheat			Oats			Barley			Rye			Flax		
	Acreage	Yield	Value	Acreage	Yield	Value	Acreage	Yield	Value	Acreage	Yield	Value	Acreage	Yield	Value
1906	223,930	5,932,269	.....	476,511	24,027,071	.....	108,175	3,876,468	.....	7,143	169,451	.....	6,484	86,170	.....
1907	223,930	4,194,535	.....	476,511	9,247,914	.....	108,175	.....	.....	7,143	.....	.....	.....	.....	.....
1908	271,000	6,842,000	.....	519,400	22,802,000	\$76,316,000	129,800	3,881,000	\$1,296,000	6,500	200,000	\$116,000	5,920	74,000	\$56,000
1909	385,000	9,579,000	.....	820,000	38,376,000	9,287,000	186,000	5,999,000	2,016,000	6,800	152,000	81,000	5,813	109,000	114,000
1910	879,301	9,060,210	\$6,254,000	783,072	16,099,223	5,152,000	121,435	2,480,165	942,000	6,672	109,000	61,000	31,070	78,480	147,000
1911	1,639,974	36,602,000	22,544,000	1,122,217	59,034,000	16,530,000	164,132	4,356,000	1,786,000	14,443	394,000	240,000	107,171	1,114,000	1,337,000
1912	1,590,010	34,303,000	18,459,000	1,461,000	67,630,000	16,231,000	187,000	6,179,000	2,039,000	15,000	377,000	211,000	132,000	1,693,000	1,557,000
1913	1,512,000	34,372,000	21,009,000	1,639,000	71,542,000	17,170,000	197,000	6,334,000	1,964,000	16,000	398,000	183,000	105,000	1,155,000	1,374,000
1914	1,371,100	28,859,000	26,403,000	1,502,000	57,026,000	23,972,000	178,000	4,806,000	2,451,000	16,400	360,800	238,000	80,000	614,000	645,000
1915	2,138,031	66,538,000	58,325,600	1,827,071	83,876,000	25,532,900	304,009	9,822,000	4,340,400	15,963	374,726	232,400	48,000	670,000	966,700
1916	2,604,975	65,088,000	86,600,000	2,124,081	102,199,000	47,011,500	336,586	9,774,000	6,939,500	17,975	440,000	418,000	95,063	1,310,500	1,389,100
1917	2,897,300	52,992,100	91,941,300	2,537,900	86,288,600	54,361,800	472,100	10,386,200	1,178,500	30,880	633,000	949,500	139,800	978,600	2,770,500
1918	3,892,489	23,752,000	45,604,000	2,651,548	60,323,000	44,036,000	470,073	7,756,000	7,523,000	47,877	826,000	1,165,000	95,920	480,000	1,498,000
1919	4,282,503	34,575,000	79,945,000	2,767,372	65,725,000	42,064,000	414,212	10,562,000	11,513,000	83,404	1,173,000	1,666,000	80,690	222,000	921,000
1920	4,074,483	83,461,000	126,861,000	3,089,700	115,091,000	41,433,000	480,699	12,739,000	7,898,000	160,960	3,420,000	4,275,000	103,700	726,000	1,329,000
1921	5,123,404	53,044,000	40,756,000	2,911,743	64,192,000	15,406,000	568,191	11,657,000	3,730,000	222,136	1,999,000	1,239,000	28,434	171,000	219,000
1922	5,765,595	65,730,693	50,597,868	1,614,580	34,711,750	15,620,287	378,053	5,632,989	2,534,845	422,500	4,351,750	2,611,050	22,186	98,727	154,014
1923	5,172,643	144,834,000	94,142,100	2,299,546	114,977,300	32,193,644	383,858	14,778,533	5,615,842	396,758	7,616,030	3,274,892	15,000	156,000	254,280
1924	5,573,813	61,311,943	73,574,332	1,847,632	55,428,960	22,725,874	494,718	12,367,950	7,420,770	274,372	2,743,720	2,606,534	15,000	75,000	139,250

LIVESTOCK SHIPMENTS, ALBERTA, 1924

CONSTITUENCY	HORSES			CATTLE		
	Local	Export	Total	Local	Export	Total
Medicine Hat	1,109	1,628	2,737	3,994	7,794	11,788
Warner	28	30	58	1,615	514	2,129
Taber	262	226	488	2,829	828	3,657
Redcliff	501	899	1,400	1,252	1,555	2,807
Bow Valley	198	557	755	2,503	1,945	4,448
Hand Hills	226	946	1,172	3,635	895	4,530
Acadia	124	247	371	222	282	504
Coronation	191	659	850	3,226	2,066	5,292
Cardston	8	14	22	278	1,135	1,413
Pincher Creek	88	330	418	472	1,491	1,963
Macleod .....	.....	262	262	.....	1,346	1,346
Lethbridge	84	34	118	197	1,523	1,720
Little Bow	56	.....	56	1,148	119	1,267
Claresholm	22	.....	22	444	511	955
Nanton	25	4	29	1,130	546	1,676
High River	205	276	481	3,158	1,961	5,119
Calgary .....	.....	1,427	1,427	.....	70,887	70,887
Okotoks	6	161	167	1,191	1,389	2,580
Rocky Mountain	13	.....	13	650	396	1,046
Gleichen	189	474	663	3,207	698	3,905
Cochrane	376	257	633	3,747	2,061	5,808
Stettler	46	171	217	2,091	1,707	3,798
Camrose	157	179	336	6,589	608	7,197
Sedgewick	111	95	206	2,255	409	2,664
Ribstone	39	281	320	383	6,815	7,198
Wainwright	205	1,237	1,442	5,589	7,059	12,648
Alexandra	194	329	523	1,622	15,217	16,839
Vermilion	59	23	82	2,809	5,178	7,987
Vegreville	162	179	341	8,841	909	9,750
Whitford	16	12	28	2,614	11	2,625
St. Paul .....	.....	7	7	602	.....	602
Didsbury	133	328	461	4,529	1,609	6,138
Olds	128	273	401	2,634	1,275	3,909
Innisfail	74	29	103	2,127	506	2,633
Red Deer	230	122	352	3,458	418	3,876
Lacombe	136	210	346	2,714	2,884	5,598
Ponoka	17	57	74	4,131	881	5,012
Wetaskiwin	18	49	67	1,560	925	2,485
Leduc .....	.....	.....	.....	297	.....	297
South Edmonton	3	.....	3	101	2	103
Edmonton .....	.....	735	735	.....	48,829	48,829
Victoria	12	4	16	4,196	23	4,219
Sturgeon	17	.....	17	2,235	.....	2,235
St. Albert .....	.....	18	18	168	.....	168
Lac Ste. Anne .....	.....	.....	.....	164	.....	164
Stony Plain .....	.....	2	2	485	.....	485
Edson	21	2	23	93	.....	93
Athabasca	7	.....	7	528	.....	528
Grouard	22	.....	22	330	.....	330
Peace River	100	10	110	8,413	.....	8,413
Total	5,618	12,783	18,401	106,456	195,207	301,663

LIVESTOCK INDUSTRY IN ALBERTA

Statistical Table covering years 1917 to 1924 showing numbers and value of different classes of Farm Stock.

Year	Number of Live Stock and Poultry in Alberta						Value per Head						Value of Live Stock						All Classes Live Stock				
	Horses		Other Cattle		Sheep		Swine		Fowl		Horses		Milch Cows		Other Cattle		Sheep			Swine		Fowl	
1917	718,317	325,861	1,209,433	276,966	730,237	3,263,217	\$60.00	\$89.50	\$64.25	\$14.50	\$24.50	.....	\$43,099,020	\$29,083,000	\$77,706,000	\$4,616,000	\$17,708,000	.....	.....	.....	.....	\$171,612,000	
1918	791,246	328,702	1,362,880	332,179	601,534	3,022,333	70.00	93.00	70.00	15.00	24.00	.....	55,387,220	30,569,000	95,402,000	4,983,000	14,437,000	.....	.....	.....	.....	200,778,220	
1919	800,380	336,596	1,247,448	364,498	445,858	4,426,375	60.00	89.00	60.00	14.00	25.00	.....	48,022,800	29,957,000	74,847,000	5,103,000	11,146,000	.....	.....	.....	.....	169,075,800	
1920	741,851	305,607	1,050,334	383,424	286,556	2,399,855	60.00	71.00	45.00	10.09	18.00	\$.94	44,511,060	21,698,000	47,265,000	3,833,000	5,158,000	\$2,260,600	.....	.....	.....	124,725,660	
1921	916,510	423,838	1,430,364	523,399	574,318	4,963,565	40.00	48.00	28.00	6.00	13.00	.86	36,660,400	20,312,000	39,448,000	3,348,000	7,188,000	4,251,500	.....	.....	.....	111,207,900	
1922	863,316	392,037	1,243,005	410,366	623,188	5,935,325	10.00	50.00	30.00	8.00	18.00	.....	34,532,640	19,601,850	37,290,150	3,282,928	11,217,384	6,586,187	.....	.....	.....	112,691,139	
1923	844,519	411,446	1,117,751	335,243	706,753	6,632,645	40.00	50.00	30.00	8.00	16.00	.....	33,780,760	20,572,300	33,532,530	2,681,944	11,308,048	7,621,674	.....	.....	.....	109,497,256	
1924	875,923	434,237	1,195,578	206,458	1,016,380	6,484,781	40.00	60.00	30.00	10.00	16.00	.....	35,036,920	26,054,220	35,867,340	2,064,580	16,262,080	4,139,265	.....	.....	.....	119,424,405	

FROST-FREE PERIOD—ALBERTA. TABLE SHOWING DAYS FROST-FREE, LAST SPRING FROST, AND FIRST FALL FROST TEN YEAR PERIOD—1915 TO 1924 (Corrected March, 1925)

Year	Medicine Hat	Calgary	Lethbridge	Vermilion	Edmonton	Athabasca	Ft. Vermilion	Peace River
1915	130 May 6 Sept. 13	82 May 21 Sept. 11	118 May 16 Sept. 11	82 June 18 Sept. 8	86 June 14 Sept. 8	68 July 1 Sept. 7	65 July 3 Sept. 6	109 May 15 Sept. 1
1916	121 May 16 Sept. 14	113 May 24 Sept. 14	105 June 1 Sept. 1	70 June 1 Aug. 10	70 June 1 Aug. 10	67 June 5 Aug. 11	48 June 26 Aug. 13	63 June 8 Aug. 10
1917	98 May 30 Sept. 5	89 June 4 Sept. 1	89 June 4 Sept. 1	56 June 13 Aug. 8	85 June 13 Sept. 6	56 June 13 Aug. 8	15 June 24 July 9	70 June 13 Aug. 23
1918	122 May 9 Sept. 9	54 June 1 July 25	107 June 1 Sept. 15	48 June 2 July 19	52 June 2 July 24	49 June 5 July 24	52 June 2 July 24	49 June 5 July 24
1919	144 May 7 Sept. 28	119 June 1 Sept. 27	121 June 1 Sept. 29	118 June 1 Sept. 26	94 June 1 Sept. 2	85 June 1 Aug. 24	54 June 1 July 25	120 June 1 Sept. 28
1920	117 June 1 Sept. 26	80 June 10 Aug. 29	117 June 2 Sept. 27	68 June 12 Aug. 19	88 June 12 Sept. 9	36 June 7 July 13	34 June 7 July 11	116 June 4 Sept. 28
1921	105 May 28 Sept. 10	94 May 30 Sept. 2	103 May 28 Sept. 9	95 June 2 Sept. 6	96 May 28 Sept. 2	92 June 2 Sept. 3	63 May 18 July 20	102 May 30 Sept. 9
1922	148 May 11 Oct. 6	92 June 6 Sept. 11	142 May 13 Oct. 2	91 June 7 Sept. 6	91 May 7 Sept. 6	94 June 24 July 31	104 May 30 Sept. 11	74 June 6 Aug. 19
1923	130 May 15 Sept. 23	106 May 29 Sept. 11	118 May 16 Sept. 11	76 May 19 Aug. 3	111 May 24 Sept. 11	69 May 24 July 31	104 May 30 Sept. 11	74 June 6 Aug. 19
1924	140 May 8 Sept. 25	103 June 6 Sept. 20	117 May 26 Sept. 20	82 June 21 Sept. 11	82 June 22 Sept. 12	67 June 25 Aug. 31	78 June 13 Aug. 30	76 June 13 Aug. 28

SIX DEGREE FROST PERIOD—ALBERTA. TABLE SHOWING DAYS AND DATES IN NINE YEAR PERIOD—1916 TO 1924

Year	Medicine Hat	Calgary	Lethbridge	Vermilion	Edmonton	Athabasca	Ft. Vermilion	Peace River
1916	154 May 8 Oct. 9	139 May 12 Sept. 28	143 May 8 Sept. 28	120 June 1 Sept. 28	160 April 24 Oct. 1	116 May 8 Sept. 1	115 May 8 Sept. 1	115 June 1 Sept. 23
1917	166 May 5 Oct. 18	166 May 5 Oct. 18	150 May 1 Sept. 28	116 June 1 Sept. 30	118 May 30 Sept. 25	116 June 2 Sept. 25	115 May 3 Sept. 24	124 May 3 Sept. 30
1918	166 May 9 Oct. 22	152 May 23 Oct. 22	149 May 26 Oct. 22	136 May 17 Sept. 30	133 May 8 Oct. 28	116 June 5 July 24	127 May 16 Sept. 30	137 May 16 Sept. 30
1919	173 April 9 Sept. 29	146 May 4 Sept. 27	146 May 6 Sept. 29	122 June 1 Sept. 27	136 May 14 Sept. 28	144 May 3 Sept. 26	127 June 1 Sept. 28	137 June 1 Sept. 28
1920	171 April 26 Oct. 15	162 May 3 Oct. 14	145 May 3 Sept. 27	110 June 1 Sept. 18	132 April 28 Sept. 10	151 May 3 Sept. 26	127 June 1 Sept. 28	137 June 1 Sept. 28
1921	228 April 18 Oct. 7	105 May 28 Sept. 10	137 May 28 Sept. 13	134 May 27 Sept. 10	194 April 28 Sept. 10	160 June 7 Oct. 11	153 May 6 Sept. 9	153 May 6 Sept. 9
1922	181 April 18 Oct. 16	134 May 6 Oct. 7	175 April 19 Oct. 11	117 June 7 Sept. 2	195 April 22 Oct. 2	161 June 24 Sept. 14	171 April 20 Oct. 8	171 April 20 Oct. 8
1923	180 May 15 Oct. 11	130 May 13 Sept. 22	142 May 6 Sept. 22	122 May 17 Sept. 16	130 May 18 Sept. 22	111 May 24 Sept. 14	119 May 15 Sept. 11	107 May 30 Sept. 9
1924	163 April 25 Oct. 10	149 April 25 Sept. 20	143 May 6 Sept. 26	121 May 22 Sept. 20	143 May 19 Oct. 9	83 June 21 Sept. 4	130 May 18 Sept. 25	146 April 25 Sept. 18

Figures compiled from Dominion Meteorological Records.

MAXIMUM AND MINIMUM TEMPERATURES, PRECIPITATION AND HOURS OF SUNSHINE, ALBERTA, 1924

STATION	Latitude N.	Longitude W.	Height above Sea Level	Class of Data	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Precipi- tation for year	Hours* Sunshine for year
																	Inches	Hours
Lethbridge	40° 43'	112° 51'	2961 ft.	Maximum Minimum Prec. (inches) Sunshine (hrs.)	48 -34 0.66 86	58 -19 1.04 121	50 7 0.69 154	66 12 0.56 208	88 26 1.17 281	80 33 3.82 226	92 40 0.54 324	86 36 2.91 243	86 26 1.46 227	76 21 0.59 152	60 -14 1.02 109	61 44 1.54 62	16.00	2193
Medicine Hat	50° 1'	110° 37'	2144 ft.	Maximum Minimum Prec. (inches) Sunshine (hrs.)	51 -30 1.92 94	61 -12 0.25 112	52 11 0.13 132	74 19 0.34 203	90 32 0.20 288	88 41 0.84 260	103 46 0.31 348	90 42 2.05 282	89 30 1.18 208	79 26 0.80 179	58 -12 0.60 122	55 -38 1.24 27	9.86	2255
Vauxhall	50° 7'	112° 8'	2555 ft.	Maximum Minimum Prec. (inches)	58 -33 0.30	59 -19 0.15	48 0 0.20	70 14 0.17	89 18 0.56	85 32 1.63	96 37 0.69	87 37 3.00	89 28 0.77	77 17 0.24	60 -23 1.05	58 -46 0.80	9.56	
Macleod	40° 44'	113° 24'	3128 ft.	Maximum Minimum Prec. (inches)	49 -33 1.00	56 -15 0.60	49 10 1.00	49 15 0.67	88 25 0.67	79 35 4.80	95 39 0.39	86 39 3.44	88 29 0.48	76 22 0.51	53 -11 1.04	55 -49 1.50	16.10	
High River	50° 35'	113° 52'	3394 ft.	Maximum Minimum Prec. (inches)	55 -26 1.32	55 -20 0.60	44 2 2.40	66 4 1.30	84 20 1.04	81 29 4.52	88 30 1.71	84 27 4.27	83 24 0.71	72 13 1.48	61 -16 1.95	54 -47 2.35	23.65	
Calgary	51° 2'	114° 2'	3428 ft.	Maximum Minimum Prec. (inches) Sunshine (hrs.)	57 -25 0.84 118	59 -18 1.10 185	50 2 2.40 155	72 10 1.25 245	89 28 0.89 263	84 32 5.00 213	93 38 2.51 312	92 34 4.66 211	86 26 1.26 187	74 19 0.94 175	64 -16 1.40 117	53 -45 2.24 90	24.49	2271
Bassano	50° 50'	112° 19'	2625 ft.	Maximum Minimum Prec. (inches)	54 -23 0.53	59 -15 0.32	48 4 0.62	68 19 0.93	89 26 0.63	84 34 1.92	96 42 2.60	88 40 3.09	85 32 0.70	74 8 1.62	58 -14 0.75	55 -49 1.50	15.21	
Olds	51° 45'	114° 5'	3413 ft.	Maximum Minimum Prec. (inches) Sunshine (hrs.)	47 -24 0.70 70	56 -16 0.32 136	45 -2 1.30 143	67 3 2.58 192	79 24 1.25 275	75 30 2.02 254	89 35 5.07 306	80 35 3.88 225	78 25 0.47 219	73 15 1.20 160	60 -18 0.38 107	46 -46 1.60 55	20.77	2142
Lacombe	50° 28'	113° 44'	2783 ft.	Maximum Minimum Prec. (inches) Sunshine (hrs.)	48 -35 0.80 61	56 -28 0.87 116	54 -10 1.08 125	72 1 1.65 204	88 21 0.97 273	88 26 0.82 243	101 34 4.21 286	87 28 2.95 223	84 25 0.79 204	76 18 2.66 155	53 -19 0.65 99	42 -57 2.80 67	20.25	2056

Edmonton	53° 33'	113° 30'	2158 ft.	Maximum Prec. (inches) Sunshine (hrs.)	48 -42 1.46 47	52 -16 0.40 1.33	45 1.44 160	72 1.13 0.63 2.18	88 1.10 1.16 2.78	86 2.26 2.14 2.98	98 4.37 2.04	80 2.88 2.52	80 0.50 2.11	69 2.20 1.21 1.65	49 -18 0.65	43 -45 1.11 0.82	18.76	2233
Red Deer	52° 16'	113° 49'	2806 ft.	Maximum Prec. (inches) Sunshine (hrs.)	50 -32 0.85	55 -22 0.52	46 0.78	73 1.4 1.60	87 2.3 1.03	86 2.28 0.84	99 3.4 5.19	85 2.02	82 1.18	73 2.40	48 0.65	41 -59 3.47	20.53	
Stettler	52° 20'	112° 40'	2700 ft.	Maximum Prec. (inches) Sunshine (hrs.)	48 -36 0.50	50 -18 0.30	50 0.58	63 9 1.98	92 2.3 0.97	84 3.0 1.43	83 4.0 2.55	84 1.81	83 0.53	65 1.43	50 0.37	47 -52 2.90	15.35	
Vermilion	53° 22'	110° 50'	2020 ft.	Maximum Prec. (inches) Sunshine (hrs.)	42 -55 0.80	46 -30 0.41	38 -22 1.00	67 -5 0.40	87 1.9 1.00	84 2.7 1.28	99 4.0 4.78	82 4.23	81 0.24	70 1.53	47 -23 0.60	45 -50 0.90	17.16	2106
Athabasca	54° 43'	113° 17'	1550 ft.	Maximum Prec. (inches) Sunshine (hrs.)	45 -57 1.58	48 -27 0.69	44 -10 1.35	72 0 0.74	86 1.8 1.50	88 2.5 0.57	99 3.42	81 4.80	78 0.29	68 1.73	47 -27 0.95	46 -49 0.72	18.34	
Grande Prairie (Exp. Farm)	55° 10'	118° 48'	1350 ft.	Maximum Prec. (inches) Sunshine (hrs.)	46 -26 1.15	46 -21 0.44	47 -4 1.40	71 11 0.15	82 2.8 0.45	89 3.4 0.60	91 3.91	84 4.60	78 1.43	62 1.09	53 1.43	42 -41 1.57	17.12	1999
Fort Vermilion	58° 27'	116° 3'	950 ft.	Maximum Prec. (inches) Sunshine (hrs.)	29 -62 1.05	48 -37 0.40	44 34 0.25	68 18 0.95	82 2.4 0.88	88 2.8 0.64	86 3.7	80 2.27	78 1.22	60 0.39	46 2.6	39 -50 0.35	8.95	2084
Elson	53° 35'	116° 25'	2985 ft.	Maximum Prec. (inches) Sunshine (hrs.)	53 -37 1.60	59 -16 0.30	51 -12 1.60	72 1.2 1.00	83 2.3 1.23	95 2.9 1.26	99 4.72	84 4.25	80 1.34	69 1.31	56 2.2	44 -54 1.50	20.58	

Report of the College of Agriculture

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I am submitting herewith the Report of the College of Agriculture for the year 1924.

The enrolment of the students in the College of Agriculture for the year 1924 was as follows:

Spring Term:

First Year B.S.A.	25
First Year B.Sc.	10
Second Year B.S.A.	13
Second Year B.Sc.	2
Third Year B.S.A.	10
Third Year B.Sc.	15
Fourth Year B.Sc.	10
Combined Course—Arts and Agriculture.....	5
Graduate Students.....	9
Household Economics.....	6
Special Students.....	1
Short Course.....	52
Total	158

Fall Term:

First Year B.Sc.	8
Second Year B.Sc.	9
Second Year B.S.A.	14
Third Year B.Sc.	4
Third Year B.S.A.	6
Fourth Year B.Sc.	17
Combined Course—Arts and Agriculture.....	3
Graduate Students.....	17
Household Economics.....	4
Short Course.....	11
Special Student.....	1
Total	94

Keith Tester won the Governor General's gold medal for the highest standing in the last two years of the work. C. E. Yauch was awarded a scholarship at Macdonald College. John Walker was awarded a scholarship at the University of Minnesota. W. F. Hanna was awarded a fellowship at the University of Minnesota, and G. B. Sanford and Andrew Cairns are continuing their work at that institution.

The demand for our publications in many cases has already exceeded the supply, and reprints have been necessary.

DEPARTMENT OF POULTRY

No courses are given in this department although space has been left for such in the time table.

HORTICULTURAL DEPARTMENT

The excellent growing season of 1923 carried growth late into the fall, but the open weather until Christmas allowed the wood to ripen thoroughly; this with a comparatively mild winter, and the ground covered with snow before very severe frosts occurred, brought all the trees and shrubs in the permanent plantations through the winter with practically no loss. Growth started well in the spring but owing to light rainfall was not as abundant as the previous year. Late spring frosts, the attack of caterpillars, and the dry season cut down the yield of all fruits.

The great bulk of the old perennials came through the winter with little loss. So also did the plots of new seedlings. Some of the latter were planted in the permanent perennial border for further trial. The balance was moved to the plots and beds around the University hospital, where, once established, they will need but little attention for years. Later the leftovers from the annual bedding plants were added to those set out as well. The result was that the beds around the hospital looked well and added to the appearance of the place.

The long caragana hedge on the north side of the main drive wintered well and made excellent growth. In addition many hundreds of young seedling caragana were put into shape for setting out in the spring of 1925.

Quite a few spruce, pines, Russian poplars, elms and maples were set out as shade and ornamental trees. A few died on account of dry weather and were replaced in the fall.

A large number of the first plantation of apples, crab-apples, and plums were dug up as it was evident they were winter injured to such a degree that they would not make successful trees. The ground is ready for replanting. Those trees remaining blossomed well, but set a small amount of fruit, owing to cold, wet weather and frost at the time fertilization should have been taking place.

Currants came through the winter in good shape, but the yield of red and white varieties was small owing to the dry weather at harvest time. The yield of black currants was much better and well up to the average. A few more new varieties were planted.

Raspberries grew too late the previous fall, and were thus somewhat subject to winter killing, and the yield in consequence much below the average. The growth during the year was satisfactory and a good stand is ready for the next year.

Some 600 young Russian poplars, 200 lilaes, and 300 caragana were set out in the nursery rows to grow for planting out later.

DEPARTMENT OF ENTOMOLOGY

Three courses are offered by this department. Two of the graduate students have proceeded to other institutions to take advanced work.

The department is fortunate in having secured the services of an Honorary Curator for the insect collections, Mr. Owen Bryant, who has been an extensive collector in many parts of America, and who has contributed much valuable material to the university collection.

We are glad to report that the outbreak of grasshoppers which has threatened the grain-producing areas of the province since 1918, has been successfully terminated with the possible exception of a small area in the Peace River district.

Though a survey of the area now known to be infested with Wheat Stem Sawfly could not be made this year, correspondence indicates that there has been no serious increase in the prevalence of this pest. Up to the present time the Sawfly, which is conceded to be the most serious menace to wheat production in Manitoba and parts of Saskatchewan has not caused severe losses in Alberta; but it is felt that unless steps are taken by the farmers in the districts now known to be infested to prevent its establishment, this insect may develop into one of the major wheat pests of the province. For this reason a poster was prepared for distribution by the Department of Agriculture throughout the infested territory, and a press bulletin has been issued, from the university, in which the life-history and methods for control are fully described.

Wireworms cause annually increasing losses in many districts where the rainfall is light and the soil is inclined to be sandy. Unfortunately we have little accurate knowledge regarding the life-history and habits of these pests. These are, however, known to be at variance with those of species in which they have been carefully studied. It is essential that a thorough investigation be made of the grain-infesting species found in Alberta before adequate measures for their control can be developed. A press bulletin was prepared in which our present knowledge is outlined and provisional control measures advocated.

The outbreak of Tent Caterpillars which developed in the neighborhood of Edmonton during the past three years reached its climax this summer. Since this pest breeds upon the abundant native growth of aspen poplars little could be done to mitigate the nuisance. Press bulletins and other articles were issued in the fall and spring in which methods for protecting ornamental trees were outlined. The public were urged to protect their trees, insofar as possible from defoliation, but this necessitated action being taken before the caterpillars appeared in destructive numbers, and the response to our appeal was not very encouraging. Heavy parasitism and disease together with a high mortality from starvation, so greatly decreased the numbers of the pest before maturity, that few eggs were laid, and in the immediate vicinity of Edmonton, no serious recurrence of the outbreak is to be feared. Abundant rains towards the end of the summer enabled most of the defoliated trees to produce a second growth of foliage.

Cutworms have been less numerous than usual and few requests for information regarding their control have been received.

Blister Beetles have been unusually abundant in many districts, and seriously injured caragana hedges. The use of a "combined" spray readily controlled the pest.

AGRICULTURAL ENGINEERING

Five courses were given as follows:

Three courses in farm machinery, farm buildings and farm motors. This work is somewhat handicapped by lack of adequate space and also the want of certain equipment. There is also a need for facilities to put on proper shop work, since the students who have not attended a School of Agriculture previous to entering the university are so far unable to get this phase of the work.

The College of Agriculture is much indebted to the various implement companies because of their readiness to co-operate in supplying as much machinery for demonstration as we can accommodate. We have a very fine collection of farm machinery, and this, almost without exception, has been placed at our disposal through the kind interest of these companies.

The head of this department was granted absence during the summer in order to take up graduate work at Iowa State College.

DEPARTMENT OF DAIRYING

This department is putting on three courses in the degree work at the university; one of these courses being compulsory, and the others elective. A large number of the boys are taking this work. Our equipment is very good, but our space is limited.

The dairy laboratory at the university is available to carry out any investigational work called for through the activities of the dairy branch throughout the year. This has been of splendid use not only to the branch, but to the teaching at the university.

Special short courses for creamery workers were conducted during the months of February, March, April and December, with a total attendance of 62 students. These courses covered two weeks each, lectures were given each day on principles and methods of the production and handling of milk and cream on the farm; the testing, grading and quality basis marketing of dairy products; the care and handling of the equipment and apparatus used in the production and manufacture of these products; also on certain aspects of dairy sanitation, organization and legislation.

The practical work in the laboratories included the receiving, recording, testing, grading and pasteurization of cream; butter-making; grading and composition tests of butter; testing of milk and cream for acidity. Generally it is the purpose of the short course to give the students a general prospective of the dairy industry, more particularly the departments that come within their individual activities.

The programme of each course was so arranged that the students who were not in a position to spend the full time with us were able to plan a shorter stay and still participate in the departments of the work of most interest and value to them.

DEPARTMENT OF SOILS

Aside from the work in connection with teaching in this Department the following lines of work were pursued:

1. Soil survey.
2. Experimental work in soils (plot work).
3. Availability of plant foods under field conditions (decomposition of the soil's organic matter).
4. Analysis of miscellaneous samples.
 - (a) Soil samples sent in by farmers.
 - (b) Alkali soil samples.
 - (c) Drainage waters.
5. Other research problems.
6. Publications.

The soil survey work, begun in 1921, was continued in co-operation with the Provincial Department of Agriculture and the topographical branch of the Department of the Interior. The Provincial Department of Agriculture appropriated funds for the field work of the soil survey report of the Macleod Sheet. The field work and analytical work for this sheet had been completed in 1923 and a report was prepared early in 1924.

During the summer of 1924 the field work in connection with the Medicine Hat Sheet was finished. About one half of the analytical work for this sheet is now done. It is planned to complete the analytical work and prepare a report for this sheet during the coming year.

During the summer of 1922 approximately 9 townships were surveyed in the Rainy Hills Sheet. The surveyed area was located as follows: townships 21.33 and 23, ranges 2, 3 and 4. This area included about 60,000 acres of land in the Government Remount Reserve. During the past summer (1924) the surveyed area was extended to include range 1 for the same townships, and ranges 1 to 4 inclusive to townships 23 and 24. This now gives an area of about 260,000 acres for the Rainy Hills Sheet, and virtually links up the Medicine Hat Sheet with the Sounding Creek Sheet. The surveyed areas in the Medicine Hat and Rainy Hills Sheet cover a large proportion of the territory now under consideration by the Dominion and Provincial Governments regarding the disposition of dried-out farmers. Soil maps for these last named areas have been prepared and should be of considerable aid to the Government authorities.

The remainder of the summer was devoted to a survey of the Sounding Creek Sheet, where approximately 40 townships were surveyed, included in ranges 1 to 5, townships 24 to 32. It is proposed to complete the survey of this sheet during the summer of 1925.

Up to the present time the survey (field work) of about five million acres has been completed, and the preliminary work on another two million acres is virtually finished.

In 1923 approximately 18 acres of land were transferred from the Animal Husbandry Department to the Soils Department. This has been laid out in series and plots and is now being subjected to experimental work, including cultivation, moisture and fertilizer tests.

For the past two summers we have conducted extensive investigations regarding the nature and rate of making plant foods available in our soils, under field conditions, by means of measuring the rate of decomposition of the soil's organic matter. This work involved the sampling of various plots under different cropping and treatment plans at intervals of two weeks from early spring until the fall freeze-up. Determinations of moisture, nitrates and ammonia have been made for all samples thus collected. The data thus obtained are now ready to be tabulated and a report prepared for publication. These investigations have revealed some startling and significant facts, such as the extremely high native fertility of our Edmonton soils, the rapid rate at which plant foods become available under our soil and climatic conditions; the still more startling fact that our soils invariably contain more ammonia nitrogen than nitrate nitrogen, and the excessive abundance of nitrate in the soils under summerfallow. The results of these investigations will include data from upwards of 600 samples of soil collected during two growing seasons, from plots under various cropping and treatment experiments.

The activities of the soils department likewise include the analysis of miscellaneous samples of soil sent in by farmers; the analysis of various alkali soil and drainage waters. This work requires the equivalent of the services of one man for a large part of the year.

FIELD HUSBANDRY DEPARTMENT

The work of the department during 1924 may be considered under three main headings:

- I. The production and distribution of new or superior varieties of farm crops.
- II. Cultural experiments with farm crops.
- III. Investigation of special problems connected with crop production.

The divisions of plant breeding and genetics, field experiments, and plant biochemistry, into which the activities of the de-

partment have been grouped for purposes of staff organization, co-operated in the carrying out of this programme, as will be indicated in the following report.

I.—PRODUCTION AND DISTRIBUTION OF SUPERIOR VARIETIES

The production and distribution of new or superior varieties of farm crops involves the co-operation of the plant breeder and field experimentalist.

Our plant breeder is responsible for the making of crosses, selections, introductions and preliminary yield tests.

During the past season the work with cereals included 5 foundation beds, 186 centgeners, and yield tests of 204 strains in 2,448 rod rows. The effort to produce early ripening corns involved tests of 205 strains, of which 56 were hybrids from last year's crosses. Head selections were made from 3 strains of sun-flowers; one strain of timothy selected from Svalof No. 523 was self-fertilized for propagation next year; 20 strains of other grasses and legumes were introduced for rod row tests; 10 tuber unit selections of potatoes were grown, and 74 previous selections were tested in rod rows.

Twenty-eight varieties and strains of winter wheat were grown in rod rows for the purpose of estimating their winter hardiness on the basis of survival in the spring. This is part of a co-operative project organized by the United States Department of Agriculture.

The field experimentalist takes over from the plant breeder for further tests in larger plots such varieties or strains as the latter recommends on the basis of his results in rod row tests. In all variety tests, whether in rod rows or larger plots, we are now aiming to use the quadruplicate system, in which four plots of each variety under test are scattered at intervals over the test block of land. In this way inequalities in the soil are largely compensated, and the results rendered very much more reliable. The larger plot tests of the past season included wheat, barley, corn, potatoes and alfalfa.

The final stage in this part of the work of the field experimentalist is to multiply the seed of the best varieties, both our own new productions and the standard registered sorts, for distribution to farmers as stock seed. The maintenance of the purity and quality of this stock involves constant re-selection and "roguing" in the field.

The results of the foregoing work take three forms:

1. *Distribution of New Varieties.* Every few years we may hope to have available for distribution a new variety or selection which has surpassed in yield or quality or adaptation any previous sort. This year, with the co-operation of six selected growers in various parts of the province, we multiply Renfrew (formerly No. III.) and University No. 222 wheats, and now have about 400 bushels of each to be distributed for seeding next spring. Renfrew is meant for use in the southern and eastern portions of the province,



STUDENTS' JUDGING TEAM FROM THE UNIVERSITY OF ALBERTA

Winners of the Macdonald Trophy at the Royal Agricultural Winter Fair, 1924. Back row: Professor J. P. Sackville, T. P. Devlin, C. K. Johns, W. Gentleman. Sitting: J. M. McAra, L. B. Thomson.



LINDA PRIDE U.A. --52363--

Purebred Junior Yearling Steer, first in his class and champion Hereford steer at the Royal Agricultural Winter Fair, Toronto, 1924. First and reserve champion Hereford steer at the International Livestock Exposition, Chicago, 1924. Bred and exhibited by the University of Alberta, Edmonton.

where Marquis is apt to be short in the straw. In a 5-year test at Edmonton, Renfrew yielded at the rate of 49.4 bushels to the acre, as compared with 42.0 for Marquis. University No. 222 is meant to replace Ruby in northern or foothills districts; the 5-year average for these two varieties is 48.1 and 34.7 bushels respectively. An announcement respecting the distribution of these wheats in the University Press Bulletin of October 10, 1924, resulted in a flood of requests for the seed, in volume several times in excess of the available supply, even when each farmer is restricted to two bushels.

This year, too, we multiplied for distribution a selection of timothy, for the time being designated Svalof No. 523, which was outstanding among some fifty strains tested, also a superior strain of Western Rye Grass picked out on the basis of our tests as the best of five improved strains sent to us by Dr. Malte.

We are continuing to multiply the seed of Altaswede clover and Howes' Alberta Flint Corn. Unfortunately the destructive frosts late in June made this the worst season for corn we have experienced in recent years, so that our crop was small and of poor quality, and we cannot fill more than a small portion of the requests for this variety.

2. *Supplying Pure Stock of Standard Varieties to Seed-Growers.*

The maintenance of a supply of registered stock seed of the leading varieties is our main avenue of co-operation with the Alberta Seed Growers' Association. Last spring we supplied to various growers, at nominal cost, 142 bushels Banner oats, 106 bushels Victory oats, 256 bushels Marquis wheat, 16 bushels Red Fife wheat and 33 bushels O.A.C. No. 21 barley. This year we have available stock of the following varieties, all of which have proven their merits in our own trials: Marquis wheat, Banner and Victory oats, Canadian Thorpe and O.A.C. No. 21 barley, Dalkold winter rye, and Golden Vine (formerly White Albertan) peas.

Since much of the Alberta seed exhibited at the Chicago International Grain and Hay Show comes from University stock it is gratifying to note that Alberta winnings this year totalled 43 prizes, including first for field peas, first for alfalfa, and 10 out of 15 prizes offered for timothy seed. The total of 43 prizes was distributed over 10 classes in which altogether 199 prizes were offered. This means that Alberta secured more than one-fifth of the prizes in these classes, although region I., in which we compete, comprises 24 states and provinces.

It may be noted in passing that we co-operate further with the Alberta Seed Growers' Association and the Canadian Seed Growers' Association, to the extent that we act as the referee in cases of field inspection and registration requiring special adjudication, and that the head of the department is a member of the Provincial Seed Board. Two members of the department belong to the C.S.G.A. advisory committee of plant breeders. At the

Guelph meeting last June important progress was made in placing the registration of Alberta-grown Grimm alfalfa seed on a firm basis.

3. *Reports on Variety Tests.* The periodic publication of bulletins or circulars reporting the results of varietal trials, and the suitability of both new and old varieties for Alberta, is the third logical outcome of this general section of the work. During the past year the only publications of this nature were a small circular on Howes' Alberta Flint Corn, by Professor G. H. Cutler and a preliminary report in the University Press Bulletin on the results of co-operative tests with potato varieties, by G. B. Sanford. Mr. Sanford, however, spent a part of the summer in working up statistically the results of all the potato experiments, so that these can be published during the coming year.

II.—CULTURAL EXPERIMENTS

The various cultural experiments come under the supervision of the field experimentalist. The principal experiments of this class under way during the past year were the following:

- Growing alfalfa in rows various distances apart for hay production.
- Comparing wheat, oats, and barley as a nurse crop for red clover.
- Covering red clover with straw or manure to prevent winter-killing.
- Growing timothy and western rye grass in variously spaced rows, for seed production.
- Pasturing sweet clover with sheep and dairy cows.
- "Hogging-off" barley, peas and corn.
- Growing sunflowers at various distances apart.
- Seeding oats at various rates. (Part of a co-operative project under the Research Council Advisory Committee on Experimental Methods).

No report has yet been published on any of the above experiments, although some of them have reached the stage when publication should be considered. The winter-killing experiment with clover was largely nullified by the general absence of damage to winter crops last season. The "hogging off" experiments indicate that of the crops tested only corn is suitable for harvesting by this method. Even corn was less satisfactory this year than last, owing to the destructive frosts late in June, which made the corn crops small and late. Sweet clover as a pasture crop shows great promise, and it is unfortunate that this crop is now so seriously threatened by the sclerotinia disease of the roots.

III.—INVESTIGATION OF SPECIAL PROBLEMS

The production of crops in a new country naturally raised a great number of questions, some of which could be answered by relatively simple field experiments. The efforts of our experiment stations were, in earlier days, directed largely along these so-called practical lines. Now, however, we have in many lines of work reached a point where it appears that further definite progress must wait on its discovery of the fundamental principles underlying the problems concerned. Our present aim in the Department of Field Husbandry is to combine the empirical method of field observations and experiments with the scientific method, in

which the factors are carefully analysed and their effects studied quantitatively. The latter method involves laboratory research.

The principal lines along which these more special investigations are being directed are the following.

A.—PROJECTS IN THE DIVISION OF PLANT BIOCHEMISTRY:

1. *The Nature of Winter Hardiness in Crop Plants.* 2. *The Nature of Drought Hardiness in Crop Plants.* 3. *Quality of Wheat in Relation to Environmental Factors.* 4. *Biochemical Methods of Estimating the Vitality of Seeds.* 5. *Hulling Studies with Timothy Seed.*

B.—PROJECTS IN THE DIVISION OF PLANT GENETICS AND BREEDING: 1. *Origin of False Wild Oats.* 2. *Sterility in Alfalfa.* 3. *Inheritance of Endosperm Colour in Corn.* 4. *Survey of Native Grasses.* 5. *Plant Succession in Slough Land.*

C.—PUBLICATIONS

Reports published during the current year on some of the foregoing special investigations include two papers in scientific journals and one research bulletin on the nature of winter hardiness in crop plants, and one paper on silage studies carried out from 1921 to 1923. The other investigations had not progressed far enough to warrant publication. During the year, also, we published a revision of our bulletin on potato diseases.

DEPARTMENT OF ANIMAL HUSBANDRY

The establishment of the four-year course in agriculture at the University of Alberta has necessitated some changes and additions in the subjects offered in the Department of Animal Husbandry. An advanced course in animal nutrition for senior students is now offered during the second term. Last year one hour each week for one term was devoted to seminar. For this purpose each student is expected to prepare and present a paper on some particular subject. Considerable time is necessary for such work and it gives an opportunity for each student to become familiar with all the available literature on subjects in which he is particularly interested. A more or less elementary and practical course in live stock marketing has also been added. The courses in "Live Stock Management" and "Herd Book Studies and Breed Development" have been extended. Altogether eleven courses are now available in the Department of Animal Husbandry, and while one or two additional courses could be included to good advantage provided the time and facilities were available, the present outline of studies, as at present appearing in the calendar, covers in a fairly satisfactory way the different phases of Animal Husbandry subjects.

This year, for the first time in the history of the institution, the University of Alberta was represented in the Live Stock Judging Contest at the Royal Agricultural Winter Fair at Toronto and the International Live Stock Exposition at Chicago. The judging

team was entered for competition for the valuable Macdonald trophy, offered for competition among teams of five men from each of the four western universities. The trophy was won by the Alberta University team.

Horses:—Horse breeding work has been carried on at this institution since 1920 with the result that now a number of draft colts are beginning to take their place in helping out with the farm work. In order to simplify the problem of stable accommodation and to reduce the cost of maintaining the farm work horses, four of the older animals were disposed of this fall. Outside of the saddle horse and the farm superintendent's horse, there now remain only three grade horses. The remainder are all pure-breds consisting of three draft breeds as follows:

Seven Percherons, 7 Belgians and 5 Clydesdales. In the horse breeding work this institution has been fortunate in having available the services of the Clydesdale and Percheron stallions owned by the Provincial Department of Agriculture.

Beef Cattle:—The outbreak of contagious abortion in connection with the beef herd, that was mentioned in last year's report, is practically cleaned up. With one or two exceptions the cows are now safe in calf or have dropped calves recently. Considerable credit is due to Dr. P. R. Talbot, Provincial Veterinarian, for this success in stamping out the abortion in the university herd. He has had a wide experience in the treatment of this particular disease and his services in this connection are very much appreciated.

Three beef bulls have been added to the herd this past year. These bulls have all been purchased from breeders within the province. A two-year-old bull, sired by Panama 3rd, from the herd of O. A. Boggs and Sons, Daysland, now heads the Hereford herd at this institution. An exceptionally well bred Shorthorn calf that gives promise of developing into a good herd bull, is now in use in the Shorthorn herd. This calf was secured from the School of Agriculture at Olds in exchange for Victor Supreme, the Shorthorn bull that has been such a valuable breeding sire in the institution's herd of Shorthorns. Due to the fact that the Aberdeen-Angus bull, purchased from Thomas Henderson and Son, Lacombe, and mentioned in last year's report, failed to develop satisfactorily, another young calf from the same herd was put in his place. This new bull is a grandson of Blackcap Revolution, the grand champion at the Chicago International Exposition last year.

The Shorthorn herd now consists of twenty females. This provides a sufficiently large herd as a basis for breed improvement and a herd from which good class-room material may be selected. In the Hereford and Aberdeen-Angus breeds, however, this institution has made little progress. This is due to the fact that very few female calves have been produced and within recent years no females have been purchased. Only six Hereford cows and three Aberdeen-Angus cows are on hand. In order to have those two breeds properly represented, a few females should be added to the herds this next year.

EXPERIMENTS WITH BEEF CATTLE

In addition to the breeding herd of beef cattle, between 75 and 80 steers were purchased in November. These are being used in connection with the steer feeding trials that have been in progress at this institution for the past few years. This winter will complete the experiment started two years ago with a view to determining the relative economy of finishing steers at different ages.

One year ago feeding trials were commenced to secure data on the following questions closely related to profits in finishing steers:

1. Value of silage as compared with greenfeed.
2. The relative economy of full grain feeding and limited grain feeding.
3. The economy of feeding oil meat.
4. A comparison of the feeding value of oat hay and alfalfa hay.

It will require two years' work yet to complete the four experiments mentioned. Already considerable valuable data have been secured, and with the continuation of these trials, this institution should be in a position to offer, to those interested in feeding steers, reliable information on the various problems relating to this important phase of the cattle industry in Alberta.

STEER EXHIBIT

The University of Alberta in co-operation with a number of prominent breeders in the Province of Alberta were able to send forward to the eastern shows a creditable exhibit of market steers again this year. This is the fourth time that the province has been represented at the larger exhibitions by an exhibit from this institution. Seventeen steers in all, made up this year's shipment. The entire lot was shown at the Royal Agricultural Winter Fair; following this, nine steers were shipped to Chicago to the International Live Stock Exposition, the remaining eight went on to the Ottawa show which was held the same week as Chicago.

The Alberta Provincial Government through its Department of Agriculture in co-operation with the Federal Live Stock Branch at Ottawa generously paid the freight charges on this year's exhibit.

SUMMARY OF TORONTO WINNINGS—*twenty animals showing*:—

3 Champions, 7 Firsts, 4 Seconds, 3 Thirds, 2 Fourths, 3 Fifths, 3 Sixths, 1 Seventh.

SUMMARY OF CHICAGO WINNINGS—*eight animals showing*:—

1 Reserve Champion, 2 Firsts, 3 Thirds, 1 Fourth, 1 Sixth, 1 Eighth, 1 Ninth, 1 Tenth.

SUMMARY OF OTTAWA WINNINGS—*nine animals showing*:—

1 First, 1 Second, 2 Thirds, 2 Fourths, 2 Fifths, 2 Sixths.

DAIRY CATTLE

Four females and a herd sire were added to the Holstein herd during the year. These animals were purchased from the herd of W. C. Houck and Sons, of Chippawa, Ontario. They are all descended from the Jemima family and will strengthen this particular breed of dairy cattle at this institution. The herd now number 42, made up of 29 head of Holstein and 13 of Jerseys. During the present year satisfactory progress has been made in the treatment of vaginitis in the dairy herd. Several cases of abortion occurred during the early part of the year, but at the present time all the animals of breeding age, with the exception of four, have either calved normally, or are well advanced in calf.

In spite of the fact that the total milk yield in the dairy herd has been lessened, due to the failure of some of the animals to breed regularly, some very creditable individual records have been made. In the Holstein herd the cows that completed records during the year made an average of 14,630 pounds of milk and 523 pounds of fat, two of these being only four years old. In the Jersey herd two two-year-old heifers averaged 8,254 pounds of milk and 467 pounds of fat.

It is hoped that during the next year a small herd of Ayrshires may be established at this institution. Not only is it desirable to have a few representatives of this breed for class-room work, but the fact that the Ayrshires are well adapted to conditions in Alberta would mean that much valuable work could be done by the institution in providing good breeding stock to dairymen throughout the province.

No experimental work was possible with the dairy herd during the present year. An insufficient number of cows, all in milk at the same time, together with inadequate equipment to carry on the work was responsible for this. Considerable experimental work in connection with dairy production should be undertaken just as soon as possible, and it is hoped that some of it may be started during the next year.

SHEEP

Five breeds of pure-bred sheep are maintained at the university. The policy of keeping this number of breeds, while necessary from the standpoint of class-room material, does not permit the building-up of large flocks of any one breed. There is an increasing demand each year for breeding stock from the university flock. During 1924 approximately 30 head were disposed of to breeders throughout the province. Many orders that were received could not be filled, as the policy has been to cull closely and dispose of nothing for breeding purposes except high class animals.

Three Hampshire lambs were exhibited this year for the first time at the Royal Agricultural Show at Toronto. In a strong class of ram lambs, the two rams shown by the university stood first and fourth.

A flock of 137 grade ewes, developed from range stock with the use of pure-bred sires, is now on hand. These are used largely for experimental purposes. Considerable valuable data are being accumulated in the experiments now in progress as follows:

1. To note the effect of breeding lambs as influencing the size, vitality and reproduction of the ewes and their offspring.
2. To compare the value of oat and sunflower silage for feeding pregnant ewes.
3. To ascertain the effect of different rations on the prevalence of goitre.
4. To determine the economy of linseed oil meal for fattening lambs when fed oat hay and alfalfa hay.
5. A comparison of the efficiency of mature and immature oat hay for fattening lambs.
6. To test the suitability of sweet clover, altaswede clover, oats, rape and a mixture of oats and rye pasture for suckling ewes and lambs.
7. To determine the value of minerals for fattening lambs.

Several years' work have already been done on a number of the above experiments, but the information obtained has not been sufficient to warrant any publication, other than mimeographed summaries which are available to those especially interested.

SWINE

The swine department has experienced a good year and in spite of the fact that hog prices have not been any too satisfactory, current and capital sales for the year, total approximately six thousand dollars. Some 50 sows farrowed in the spring, and losses were small with the spring pig crop. On account of the fact that a considerable percentage of the sows did not farrow until late in April, the usual number were not bred for fall litters. About 100 head of fall pigs will be carried through the winter. With present feed prices, this looks like a sufficient number. The bulk of these will be on experimental feeding.

The Tamworth and Berkshire breeds still predominate in point of numbers in the herd, but the favorable experience with Yorkshires during the past season has led to the retaining of a number of choice gilts, with a view to increasing the numbers of this breed. A number of improved Duroc-Jerseys are on hand, as well as two Poland-Chinas, but the representative of these breeds is not being increased. Individuals of some of the other breeds were purchased from breeders as weanling pigs and carried through till the fall for class-room work and were then marketed. During the year a considerable number of young sows and boars were sold throughout the province, going as far north as Grand Prairie and south as far as Raymond.

Experiments with swine during the past year included:

(a) Comparisons of such pasture crops as a cereal mixture, oats and fall rye, rape, alfalfa, sweet clover and sunflowers.

(b) A determination of the effects of feed and method of feeding on the type of hog and quality of carcass produced.

(c) Work with mineral mixtures both simple and complex for winter-fed pigs and pigs under pasture conditions.

(d) Comparisons of various rations for wintering brood sows.

(e) Further work to profits in raising fall pigs.

The feeding of mineral mixtures to swine has led to very encouraging results. Fall pigs fed during the winter of 1923-24 on a straight grain ration made average daily gains of .63 pounds at a feed cost of \$6.75 per cwt. whereas pigs receiving a simple mineral mixture made average daily gains of .89 pounds at a feed cost of \$6.75 per cwt. Spring farrowed pigs carried on rape pasture during the summer, from June 26th to October 10th, and self fed a straight grain ration, made average daily gains of .66 pounds at a feed cost of \$5.78 per cwt., while those receiving a simple mineral mixture in addition to the grain ration made average daily gains of 1.31 pounds, at a feed cost of \$4.10. Where both were fed free choice the simple coal, lime, salt and sulphur mixture gave better results than more complex mixtures. Further work with mineral mixtures is being conducted during the present winter as this seems to be one of the most important lines of investigation which can be carried on.

FEEDERS' DAY

The third annual "Feeders' Day" was held at the university about the middle of April. This means of giving publicity to the results of the experimental work in live stock has proven very satisfactory. Approximately 250 people were present this year. These included farmers, representatives of the Provincial and Dominion Governments, who are interested in live stock, packers, commission men and representatives of the agricultural press.

BACON HOG COMPETITION

In co-operation with the Provincial Department of Agriculture and the Federal Live Stock Branch a very successful short course and swine competition was held at the university in November. The objects of this course were to stimulate a greater interest in the production of a better grade of hog in Alberta, and to discuss the various questions related to the development of the swine industry in Canada. The course lasted two days. Over 200 people interested in the production of hogs were present, and as an indication of the popularity of the course, there was an unanimous vote of those in attendance to have the course put on next year.

PUBLICATIONS

During the present year two publications have been prepared by the Department of Animal Husbandry. Bulletin No. 8 "Oat vs. Sunflower silage for fattening steers" is a complete report of three years' work comparing these two silages for finishing steers. Circular No. 3 "Steer-feeding in Alberta" was prepared with a view to encourage the finishing of more steers in the Province of Alberta. The various problems in connection with the feeding, purchasing and marketing of steers is dealt with in as practical a manner as possible.

THE FARM

There is a total of 430 acres in the university farm. A small section, approximately 40 acres, is close to the university campus. This is taken up with the farm buildings, a number of small paddocks and fields that are used for pasture for the dairy herd, and a run for the other stock.

The fact that the farm acreage is small in proportion to the number of live stock maintained means that after pasture is provided and a sufficient amount of silage crops produced to fill the four silos, there is comparatively little left for green feed. Up to the present no grain has been grown on the university farm for threshing.

During the past two years about 40 acres of the subdivision known as Windsor Park, adjoining the university, has been cropped on shares. This has helped out in providing more feed, and as it is located close to the farm buildings, it can be worked to good advantage.

In addition to this, two pieces of land on the university campus containing about 10 acres that had previously been used by the Department of Horticulture have been turned over to the Department of Animal Husbandry. This has provided more land close to the farm buildings, and has worked in very well for growing silage crops.

During the present year a start has been made to provide permanent pasture by seeding one field to a mixture of various grasses suitable to the conditions in this district. If this proves successful, more of the farm will be devoted to this mixture, rather than depend on annual pastures, as has been the case in the past. An attempt has also been made this year to grow sweet clover. In case this comes through the winter satisfactorily, it will help materially to solve the difficult problem of providing sufficient pasture to carry the live stock through the summer.

The crop on the University farm, this year, was quite satisfactory. The weather during the earlier part of the season was somewhat dry, but the rain in July came in time to mature the crop and also aided materially in reviving the pasture. In addition to the pasture and silage crops considerable greenfeed was harvested.

EXTENSION

The extension work of the College of Agriculture is made up of various activities, chief of which are:

1. An extensive correspondence on technical problems which is handled either directly through each department or, when practicable, through a special member of the University Extension Department.

2. Addresses at public meetings, public conventions, U.F.A. locals, technical conventions. Some of these are arranged for by the University Extension Department.

3. Taking part in short courses under the auspices of the Provincial Department of Agriculture. Along with this may be included consultation work and work on committees at the request of the Department of Agriculture.

4. Technical work carried on in conjunction with the Federal Department of Agriculture.

5. Reports on completed work through the Agricultural Publications Committee.

Acknowledgement is hereby made of the hearty sympathy and co-operation experienced in the work of the college in its relationship to the different breed organizations. Dairymen's Association, Fairs Associations, Provincial Seed Growers' Associations, Canadian Seed Growers' Associations and other forms of organized agricultural effort.

Respectfully submitted,

E. A. HOWES,

Dean.

Report of the School of Agriculture, Claresholm

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit the following Report of the Claresholm School of Agriculture for the year 1924.

The undersigned was appointed to the position of Principal in September, 1924, therefore his knowledge of the territory served by the school, of the problems facing it, and of the school activities of the entire year, is not as complete as one would wish. For this reason this report will not treat with the year's work of the school in a thoroughly detailed manner.

A number of changes in the personnel of the staff took place before the opening of the fall term in October. J. C. Hooper, M.A., the former Principal, left the employ of the Department in October; G. B. Walker, B.S.A., Farm Manager and Instructor in Animal Husbandry, resigned his position in October to engage in farming; H. McArthur, B.S.A., Instructor in Field Husbandry, resigned in July to accept a position with the Robin Hood Milling Company; W. Lawler, Instructor in Mechanics, left the employ of the school in July to undertake similar work in Ontario.

ENROLMENT

The total enrolment of this school since its first opening, in 1913, has been 932; of which number 665 were men and 267 were women.

The enrolment in the fall term of 1924 was as follows:

First Year (Agriculture)	45
Second Year (Agriculture)	15
First Year (Home Economics)	13
Second Year (Home Economics)	10
Total	83

This enrolment is an increase of thirteen over that of one year previous. We expect a further increase in attendance for the next school year, commencing October, 1925, provided crop conditions are normal and a judicious publicity campaign is adopted.

Prizes for proficiency in the various departments of the course were awarded as follows:

- Gold Medal for General Proficiency (Two Year Course in Agriculture)
C. R. Laing.
- Gold Medal for General Proficiency in Animal Husbandry during Two Year Course, A. Oseen.
- Robin Hood Essay Competition—1st, H. O. Taylor; 2nd, W. B. Marshall;
3rd, S. Price.

Lethbridge Herald Essay Competition—1st, Chester Laing; 2nd, A. Oseen.

Meal Serving Competition—1st, Christine Straughan; 2nd, Katie Nowlin.

House Decoration Competition—1st, Cora Allen; 2nd, Marjorie Leeds.

Barn Planning Competition—1st, Lorne Laidlaw; 2nd, Sherlock Doran; 3rd, Joe Robertson.

Best Bushel of Wheat Competition—1st, Harry Taylor; 2nd, Clinton Keller.

Best Bushel of Oats Competition—1st, Clinton Keller; 2nd, Chester Laing.

Best Collection of Weeds Competition—1st, Cora Allen.

Best Set of Lingerie made in First Year Sewing—1st, Alice Pelletier; 2nd, Jean Miller.

Best Woodwork Project—1st, Stanley Mawdsley.

Calgary Herald Prize—General Proficiency in First Year (Home Economics)—1st, Artence Champney.

Calgary Herald Prize—General Proficiency in First Year (Agriculture)—1st, G. R. Miller.

No Inter-School Judging contest was held in 1924 and the Annual Inter-School Debate was also cancelled.

INTER-PROVINCIAL DEMONSTRATION TEAM CONTEST

In February the T. Eaton Company held a Farm Products Exposition in Winnipeg and invited the Boys and Girls' Club teams from the three prairie provinces to compete in the Inter-Provincial Demonstration Team Contest. The Claresholm School sent a boys' team to this exposition to represent the Province of Alberta. The members of the team were: G. R. Miller, of Claresholm, and G. G. Fisher, of Hillspring. Mr. G. B. Walker, Instructor in Animal Husbandry, was trainer and coach. The subject of their demonstration was "The Dairy Cow." Though competition was very keen, the Claresholm boys gave masterly demonstrations in their three appearances at the show, and were declared the champions of Inter-Provincial Demonstration Teams. They brought back with them a beautiful championship banner, which now hangs in the main corridor, and each boy was awarded a gold watch suitably engraved. The Claresholm school feels that in this competition, its boys upheld the honor of the province in splendid style, and hopes in future similar events to make an equally good showing.

STUDENT ORGANIZATIONS

Student Council—This organization is responsible to the Principal for the proper conducting of purely student affairs such as formal school dances, collection and distribution of fees for the student societies and the administration of general student business.

Literary Society—The Literary Society has charge of social evenings and conducts entertainments of a literary and musical character. A regular meeting is held every Saturday evening. The aim is to have all students take part in some way in the programme, in order to develop literary and musical genius, and to provide wholesome entertainment for all.

Athletic Association—An executive appointed by the students, has charge of athletic activities, arranges games with outside teams, and purchases athletic supplies and school sweaters required by the students, keeps the skating rink in shape and supervises generally the physical well-being of the student body. Unfortunately we have no gymnasium or other building for indoor games and physical exercises. The need for such a building is severely felt during the winter months when outdoor exercise is prevented for long periods on account of extreme weather conditions.

Student Christian Movement—The S.C.M. has its weekly meeting on Sunday afternoon. The ministers of the churches of Claresholm have freely contributed their services for these meetings. Rev. W. March, of the Anglican church, and Rev. Geo. Webber, of the Methodist church, each gave a series of addresses on selected topics during the year.

School Orchestra—For the past two years the school has been fortunate in its musical talent resulting in the organization of a good five-piece orchestra. The orchestra has added much to our musical entertainment and furnished the music for our Saturday evening dancing, following the literary meetings. On a number of occasions the school orchestra was engaged for dances at points near Claresholm.

In all of the student organizations, the members of the staff have contributed their assistance, acting in a supervisory and advisory capacity.

THE YEAR BOOK

The Year Book of 1924 is the fourth annual edition to be published by the school. This book is prepared by a student editorial and business staff and provides some training in publishing and advertising. Its primary object is to record the biographies of the graduating class and the accomplishments of the school organizations. It also contains articles by some of the leading agriculturists of the province. The Year Book for 1924 is a credit to the school and to the student publishing staff.

C.S.A. ALUMNI ASSOCIATION

The second reunion of the C.S.A. Alumni Association took place on January 3rd, 1924, with a fair attendance of ex-students. On July 18th the first summer reunion took place with a large attendance of both ex-students and farmers. Addresses were given by several speakers, games were played, and a tour of the field husbandry experimental area took place during the afternoon. This was followed by a short business meeting and a dance which lasted well into the morning hours.

During the year there was a slight increase of twelve new paid-up members. The number of paid-up members, however, is still rather disappointing, it being difficult to interest the members

of the earlier graduation classes. The executive, however, hopes to further enlarge the enrolment during the coming year through the medium of *The Shock Absorber*, the official organ of the association, which is published quarterly.

HOME ECONOMICS

The registration in the Home Economics classes was heavier in 1924 than for some years previous. One special feature of this course was the "Meal Serving Competition" for senior students, who prepared and served meals for a period of two days each. Cost of meals, quality of food and correctness and daintiness of service were considered in declaring the winners. Another event, which stimulated competition amongst the Home Economics students, was the exhibition of cooking and sewing, toward the close of the winter term. This exhibition was largely attended by the ladies of Claresholm and vicinity.

The girls' dormitory was maintained as usual through 1924. Sixteen students and the lady members of the staff are quartered there during the school term. The expense for each girl at the dormitory is considerably less than the regular rate for board and lodging. Dormitory life also adds much to the attractiveness of the Home Economics course by providing living conditions that are pleasant and comfortable.

During the spring and summer months the members of the Home Economics staff were engaged in school fair and Women's Institute work. In October, Miss MacIntyre gave instructions in sewing and cooking at a short course for the colored settlers at Athabasca. The course was well received, and the efforts of the department to provide suitable instructions in Home Economics to these people, were deeply appreciated.

EXPERIMENTAL PLOTS, LAWNS, GARDENS

The working season opened with April slightly above the average precipitation for the period 1914-24 inclusive. Seeding commenced on April 25 and was completed in good time owing to the month of May being the driest on record at this station. Owing to the dry weather, germination was slow and irregular on all plots not summerfallowed in 1923. Opportune rains in June saved the district from a partial crop failure. Precipitation during July amounted to only .795 inches, but 1.96 inches of rain fell during the first week of August and filled all grains not already ripened. On the whole the four growing months, May-August inclusive, were over one and a half inches below the mean precipitation for the past eleven-year period. Additional data regarding the precipitation at this station are given elsewhere in the report.

Work with corn was unsatisfactory during the year, owing to the cold season, there being frost on the following dates: June 5th, 2 degrees; June 22nd, 1 degree; July 23rd, 2 degrees, and September 20th, 6 degrees. This gives a frost free period of only 58 days. No harm was done by the July frosts, however, to any

of the twenty-seven varieties and strains of corn under test. The first frost in the fall killed the corn and made accurate green harvest weights from this crop impossible. Sunflowers, however, were not affected by frost to any appreciable extent before cutting during the last week of September. Only three varieties of corn produced mature ears, these being: Quebec No. 28, Howes' Alberta Flint and Improved Squaw.

Variety tests with fall wheat were continued and will be expanded in 1925. The Kharkov strains again proved to be the most winter hardy, this being particularly true with the strain Kharkov M.C. No. 22, a selection produced at Macdonald College, Quebec. Two new varieties, Minhardi and Minturki, were imported from the University of Minnesota, and results from these will be available in 1925. It is hoped that a suitable winter-hardy winter wheat may be found, as considerable interest regarding this crop is evident throughout this territory.

There are now 1,099 plots under observation at the school. These plots range in size from one acre blocks to one one-hundredth acre plots. Out of this total four hundred and forty-seven are being used for crop rotation and cultural treatment work. Results from this type of work may not be expected in as short a time as in the case of variety tests. It requires considerable time for these experiments to reach a relatively uniform soil condition. In this district where soil blowing is a question of major importance a substitute for the bare fallow will prove of great advantage. A progress report regarding summerfallow substitutes may throw some light on some possible substitutes for the bare fallow. The past season has been dry and the various treatments showed up clearly. During 1924 Marquis Wheat on summerfallow yielded 37.5 bushels, after N.W. Dent corn 34.58 bushels, after swedes 23.95 bushels, after sunflowers 23.54 bushels, after oat and pea greenfeed 26.66 bushels, after potatoes 33.56 bushels. These figures point out the heavy water requirements of the sunflower and swede crops. These two crops therefore are not so suitable for bare fallow substitutes as corn or potatoes. Corn appears the most promising; potatoes while giving a good return, would be a difficult substitute to handle on a scale large enough to offer much relief. All of the above yields are from duplicated plots which will be uniformly seeded to oats before again producing the bare fallow substitute crop or being summerfallowed.

Generally speaking the grain yields were good excepting where the land was fall plowed. Wheat in practically all cases weighed sixty-five pounds to the bushel. Oats while weighing well per bushel ripened somewhat unevenly. The barley crop was only fair in color and quality. Considering the season, results from the field experimental areas were very promising.

An important part of the work in the Agronomy Department is concerned with soil moisture investigations. During the season some 1,211 samples were taken during the spring and fall. One man was occupied with this work for about a month in the

spring and again in the fall. Insufficient time has elapsed, however, for publishing any results. There is room for more work in this direction as the work is closely linked up with many farming operations.

Horticultural work was increased during the season by starting several new flower beds on the campus. The flowers made a very fine showing until frosted in the fall. The campus was enlarged and provision was made for tennis and basketball courts. Growth in all windbreaks was very good. The carragana hedges bordering the driveway made a wonderful showing. Small fruits did not do so well, as the raspberries killed back badly and the strawberry blossoms were nipped by a late spring frost. A considerable number of apple trees were set out in the orchard and with a very few exceptions went into winter in good shape. All vegetables excepting frost-tender sorts, yielded reasonably well. Beans and cucurbites were a total failure, and tomatoes, after being reset three times, produced very little fruit.

METEOROLOGICAL RECORDS

Maximum and minimum temperatures were recorded daily throughout the year in accordance with instructions of the meteorological branch, Toronto. Daily precipitation was also recorded by means of a rain gauge. Precipitation for the year totalled 13.353 inches, being below the year average for the last ten years, which stands at 15.827 inches. Fortunately the greatest monthly precipitations occurred during the growing months, May, June and July. The following table shows the monthly precipitation for the last ten years, totals for each year and the average for each month during that period.

PRECIPITATION RECORD

Month	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	Monthly Average
January ...	.69	.72	.135	.50	.07	.70	.60	.20	.26	.93	.480
February ..	.66	.55	.39	.52	1.24	1.70	.60	.32	.56	1.13	.683
March	.25	.94	.29	.50	.47	.31	1.60	.61	1.00	1.68	.765
April	.35	1.05	.62	.14	.27	1.40	1.27	3.42	.87	.64	.903
May	3.35	3.26	3.64	1.27	2.01	.89	1.14	.50	4.00	.35	2.061
June	7.70	1.78	3.23	1.21	.33	.71	.57	1.85	8.65	3.46	2.949
July	3.50	1.75	1.54	.63	.73	3.67	3.38	3.07	2.69	.795	2.175
August	2.95	4.70	1.40	2.32	1.24	.11	1.00	.99	.825	3.053	1.859
September ..	6.99	4.17	1.44	1.78	2.69	.04	1.35	.57	.23	.915	2.017
October	.80	1.93	1.23	.80	1.70	.70	.18	.44	.05	.315	.815
November ..	2.10	.20	.15	.25	.30	.125	1.06	.29	.85	.15	.547
December ..	.15	.48	.42	.80	.65	.50	.21	.56	1.01	.95	.573
Yearly Totals	29.49	21.53	14.48	10.72	11.86	10.85	11.96	12.80	20.95	14.37	15.827

DEMONSTRATION FARM

Crops throughout the Claresholm district in 1924 were generally good. Those on the demonstration farm were among the best; our Marquis Wheat averaged fifty bushels to the acre and the yields of other cereals, grasses and legumes were correspondingly satisfactory. Approximately fifty-six hundred bushels of grain, consisting of wheat, oats and barley, were threshed; there

was ensiled about seventy tons of sweet clover and corn; sixty tons of hay, greenfeed and fodder corn were put in stacks; there was produced an abundance of good quality straw. In addition to these harvested crops, sufficient pasturage was maintained to carry the breeding stock of cattle, sheep and hogs, as well as the idle horses. Two fields were seeded down for the coming year, one of twenty-five acres to sweet clover with oats and barley as nurse crops, and one of Fescue, Brome, Kentucky Blue grass and sweet clover, with oats as a nurse crop. The catch obtained in both fields was fairly satisfactory.

The Windbreaks established on the farm in 1922 made excellent growth during the season, the trees have now reached a height of from ten to twelve feet. The nursery plot continues to supply all trees used on the property, about three hundred being set out in the experimental plots this year. Considerable interest has been shown in the farm trees by the public and they should prove an incentive to further windbreak planting in the district.

Good increase was realized in all farm stock. The pig increase was exceptionally good, seventy-two being farrowed by the seven brood sows kept. We are now maintaining breeding stock of two breeds of beef cattle, namely, Hereford and Aberdeen-Angus. They total twenty-nine head. The breeding flock of Shropshire sheep was increased by twenty lambs during the season. No colts were raised.

There are being wintered on the farm twelve horses, twenty-nine breeding cattle, forty-two steers, thirty-three sheep, and forty-six hogs. An effort is being made to utilize as much as possible rough feeds, particularly the surplus straw, in carrying everything but the fattening stock. Ensilage aids in this. The trench silo was improved during the summer by lining with two-inch lumber. It was filled with corn and a horse was used to pack the contents. A layer of straw was placed both below and on top and when feeding commenced in November the ensilage was found to be in perfect condition, the loss both at the edge and top of the silo being negligible.

There has been demand from local farmers for all wheat raised on the farm for seed purposes. Considerably more than we have available for sale could have been disposed of.

REPORT OF SCHOOL FAIRS, 1924

School fairs coming under the jurisdiction of the Claresholm School of Agriculture are those included in the Claresholm, Gleichen and Raymond School Fair districts. The total number of fairs for the three districts was thirty-one. The total attendance of adults was 3,865, and of children, 5,026, while the exhibits totalled in number 15,497.

The following centres held School Fairs for the first time: Coaldale, Warner, Twin Butte, Coleman, Travers and Midnapore. The Coaldale fair deserves special mention, this fair being ex-

ceptionally good for a first attempt—with the standard of exhibits considerably above the average. The remainder of the new fairs were quite successful and all of these centres intend to continue in 1925.

Though most fairs were quite successful, there were a number of centres where fairs were abandoned, for this year. On investigating, I find that most of these fairs “fell down” because there was no systematic supervision of them in the early part of the season. It appears that the persons responsible for the organization of fairs in this territory were not left steadily on the work during the preparatory period of May and June. They were required for the Women’s Institute work and other duties, and as a consequence there was not sufficient supervision of the fair work to insure success at some centres. The following were abandoned in 1924; Pincher Creek, Cayley, High River, Champion, Parkland, Milk River, Aden, Foremost, Orion, Bow Island and Okotoks.

It is advisable that instructors who are appointed to this work each year, should be allowed to spend all their time during the months of May and June in promoting School Fair work exclusively, otherwise some fairs will not carry themselves along and failure is the result. It is noticeable that some of the failures this season were in excellent agricultural districts and not because of being located in dry areas.

The School Fair Short Course was held from July 5th to 12th, and was attended by sixty-eight scholarship winners from all the School Fair centres of the district. A very full programme was followed and a profitable week was spent by the boys and girls, who were given instruction in Horticulture, Field Crops, Live Stock, Carpentry and Domestic Science. Games, physical training, community singing, lantern slide lectures, moving picture films and drives through the surrounding country, rounded out a profitable course. A number of boys and girls who attended this course in previous years are now enrolled in the regular course at the school.

Respectfully submitted,

S. H. GANDIER,

Principal.

Report of the Olds School of Agriculture

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit the Annual Report of the Olds School of Agriculture for the school year 1924.

ENROLMENT

It is interesting to note that 90 per cent. of the students who have been in attendance at the Olds School of Agriculture have come from the rural districts.

STUDENT ORGANIZATION

In the various organizations of the school, the students are able to round out their general course with the development of the athletic, social and literary side of college life. In this they are assisted by the members of the staff best suited in the various lines. Special care is taken to see that all students are given a chance to act on the society executives thereby receiving training in leadership.

The Literary Society holds weekly meetings and special attention is paid to platform work and public addresses. Debates and public speaking form the central items of the programme. These are balanced with music and recitation numbers. The weekly school paper, *The Chinook*, is edited by the various classes in turn, and is both instructive and amusing.

The debates were a boon to the school from the educational standpoint in aiding the development of the literary side of the work. They also tended to promote friendly competition between students in the schools and brought them into closer touch with one another. Benefits came not only to those students who actually took part, for they were an education to the whole student body.

MAGAZINE

The students of the School of Agriculture in publishing the O.S.A. Magazine again in the school year of 1924 and 1925 concluded the ninth effort in this line. There are one thousand copies of this magazine issued each year at an expense of approximately \$500. The magazine not only supplies the students with a record of their activities during the school year and gives them, through contributed articles, some information on various phases of rural problems, but also furnishes the O.S.A. with the best kind of a publication for advertising purposes.

ALUMNI ASSOCIATION

Ever keeping in close contact with the students and ex-students of this school the Alumni Association still continues its good work, encouraging the things as far as it can that are worth while. Since its inception, the News Letter was started and still continues to play a very important part in keeping up that good feeling originated in the school by keeping the members of the association in close touch with each other. Our little paper may only be a little gossip sheet, but it gives, we hope, what members ask, that is, news of interest to them or others.

The Experimental Union continues to be a great success. At first we were rather dubious about the success of the Girls' Experimental Union. That spell has passed. We are now very optimistic of the future. The girls proved there was a place for it with the association, by exhibiting many good useful articles at the last summer reunion. Of the future we anticipate a large increase in membership and some wonderful exhibits.

There is little to be said about the Boys' Experimental Union, it is too well known, and the progress it has made is remarkable. The exhibits shown at the winter meetings bear out our statements when we realize it is only a few years since it started in a small way. Within short time, we predict, if growth continues on the same scale, that many more of our leading cereal exhibitors will be anxious to secure space for their grain. One has only to look over the list of awards in the past to see that such things are going to happen.

The meetings of the association with one or two exceptions, and these due to adverse climatic conditions, have been very encouraging owing to the large attendance. There are very few Alumni Associations that can meet twice a year and have displays of goods on exhibit twice yearly, obtain the large attendance it does, carry on the News Sheet and do the many other things that are necessary to keep up its aims. Along with the above it encourages the growing of the right type of live stock by holding a judging competition at the summer meeting. During 1924 the two medals awarded each year to successful competitors were won by Mr. T. Kilduff, Lloydminster, and Mr. R. Everett, Gadsby, both of class '24.

PRIZES AND SCHOLARSHIPS

The following prizes and scholarships were awarded to students during the past year:

The P. Burns Company, Calgary, donated again, last year, \$25.00 in prize money to the first and second years in both Agriculture and Domestic Science. These prizes aggregated \$100.00 for the four classes. Mr. P. Burns has paid these prizes for the past eight years. The prizes add a very distinct value to the courses in the school and they are very much appreciated by both the students and staff of the Olds School of Agriculture. In the Domestic Science Branch the prizes are for practical work in sew-

ing, cooking, laundrying and dairying, whereas, in the agricultural course, the awards are based on the grain and stock judging, carpentry, blacksmithing, weed seed identification and dairying lines of work. The following were the winners of these prizes:

2nd year men	1st	L. P. Erickson, Olds.
	2nd	P. McGowan, Ensleigh.
	3rd	C. Patriquin, Edmonton.
2nd year women	1st	Nina Rewell, Olds.
	2nd	Greta Moir, Westcott.
	3rd	Ella Graham, Lacombe.
1st year men	1st	J. E. McKee, Benalto.
	2nd	S. Murray, Olds.
	3rd	J. A. Wetmiller, Lathom.
1st year women	1st	E. Beales, Elnora.
	2nd	M. Welsh, Olds.
	3rd	I. McNaughton, Rumsey.

Second-year medal to first-year man in general proficiency went to J. E. McKee, Benalto.

A scholarship of \$50.00, donated by the U.G.G., of Calgary, for general proficiency, in the first-year Domestic Science, was won by Miss I. McNaughton. This prize was paid to the winner when she entered the second-year term, 1924-25.

The Olds School of Agriculture Scholarship, of \$50.00, for general proficiency in first-year work, paid out on the same basis as the U.G.G. prize, was won by J. E. McKee, Benalto.

The prizes in the meal-serving competition, open to second-year Domestic Science, was won by B. Ross, Olds, and N. Rowell, Olds.

The prizes in the Domestic Science Graduation Dress competition, were won by I. Riis, Blackfalds; M. Abbott, Lacombe, and N. Rowell, Olds.

Prizes for set of Lingerie were won by K. Keller, Craigmyle, and E. Beales, Elnora.

Medals for general proficiency in stock judging and in judging sheep and horses were won by C. Galloway, Fort Saskatchewan, and T. Kilduf, Lloydminster.

The 1924 graduation exercises were held on July 19th instead of in March. These exercises were postponed as a result of the school having to close one week earlier than scheduled. This change was considered advisable on account of an epidemic of scarlet fever which broke out in the town about the middle of March.

BEES

Owing to two severe hail storms in the district, the production of honey was very small in comparison to anticipation up to July 27th.

For the purpose of carrying on experiments with bees, two three-frame and three two-frame nuclei, were purchased and arrived during the early part of June. Very satisfactory progress was made early in the season. Swarming was prevented in all hives except one. This swarm, on emerging, was immediately placed in an eight-frame hive, where it made nearly sufficient honey to carry it over the winter.

Amount of honey gathered from the four remaining hives was extracted and placed in sealers, this amounted to 146 lbs. or thirty-six and a half pounds from each hive. A portion of this was later used, along with frames from which no honey had been extracted for winter feeding and sufficient unextracted frames retained for early spring feeding.

Experiments in winter housing were started. Four hives being wintered in the basement of a house, shut off, so that ventilation could be given and where the temperature is kept down to 50° Fahrenheit. The other two being wintered in a specially constructed frame outside, with chaff packed round them on all sides. Up to the present, each hive appears to be in good condition for spring work.

The yield of honey as given, along with the strong condition of the hives, appears very satisfactory considering the dearth of flowers and consequent loss of honey during the season. It is worth noting that a large number of visitors were thoroughly interested in the bees, and frequently spoke of starting a small apiary of their own as early as possible. The drawback seems to be lack of information on how to care for them.

BOYS AND GIRLS' DEMONSTRATION TEAM WORK

A new line of work was undertaken during the past year. This work consisted of the training of teams of boys and girls in the demonstration of various subjects pertaining to Agriculture and Domestic Science. This work was taken up with a view of training boys and girls along lines hitherto neglected. It not only gives them information and practice in certain subjects but they get an excellent training in public speaking. In addition much valuable information is brought to the older people which otherwise they would not get.

The work was undertaken in five centres: Castor, Lacombe, Red Deer, Olds and Carstairs, and in all forty-eight teams were organized. However, all did not complete their training. The greatest difficulty seemed to be to get trainers who were sufficiently interested in the work. This, no doubt, will be largely overcome this year. Those districts in which the work made satisfactory progress seemed highly elated over the results obtained. This will give impetus to the work and less difficulty should be experienced this year in regard to trainers. In each of the centres, demonstration contests were held in October. In all twenty-nine teams took part, as follows: Castor, 13; Lacombe, 3; Red Deer, 3; Olds, 8;

Carstairs, B. The winning boys' team and the winning girls' team in each case competed in a final competition at Olds late in October.

REPORT OF SWINE CLUB WORK FOR 1924

We are able to report a satisfactory year in this work for the Olds District. No new clubs were formed but the established clubs experienced satisfactory progress. The members showed a very active interest in this line of work.

The clubs in operation were Olds and Red Deer. Olds has been running for three years and consequently it was not necessary to supply the members with feeders. However, in the Red Deer club there was a demand for feeders from the old as well as some of the new members. Fifty-two feeders were supplied. In addition fifteen registered gilts were sold to members. Throughout the season the members of both clubs were assisted from time to time and encouragement was given.

The competitions held during the year were very satisfactory. In all there were six. This includes those held at Edmonton in November. At the School Fairs, both at Red Deer and Olds, there were two classes for Swine Club members: these being the class for pair of feeders and the class for swine judging. At Olds we had eleven entries in pairs and ten entries in the judging. At Red Deer we had twelve entries in pairs, and ten in the judging. There were some excellent entries in the class for pair of pigs and in the judging the members showed a good knowledge of what to look for in the bacon hog. W. J. Elliott, did the judging at both places.

In addition we had a demonstration team contest. At Red Deer there were three teams and at Olds there were also three. The subject in each case was "The Bacon Hog." The teams were instructed throughout the summer and contests were held in October. These were very satisfactory both from the boys' standpoint and also from the point of view of instruction to the public. The training received by the boys alone is sufficient reason for the continuance of the work. The winners from each place were sent to Edmonton where they competed for the C.P.R. trophy.

Unfortunately the Red Deer car lot was not ready for the Swine Club Show, at Edmonton, in November. However, Olds forwarded a load which was a credit to the members. While they only stood sixth in the carlot competition they found a very ready sale, selling second to the winners. In the judging contest and demonstration, which followed, the Olds and Red Deer teams made a very creditable showing.

Looking back over the work accomplished during the year, we feel that much good was done along the line of bringing the right type of hog before the public. Also the training of the boys and girls in judging, public speaking and business methods makes

the Swine Club work an extremely valuable one. Conditions last year were rather unfavorable to the formation of new clubs, but the improvement of conditions and expansion may be looked for in the future.

SCHOOL FAIRS

In 1923, owing to the closing of the Youngstown school, 13 fair centres came under the management of the Olds school, raising the total to 38 centres which were re-organized. Only one new centre was formed, that being at Markerville.

In 1924, four new centres were organized as follows: Mayton, Sedalia, Leslieville and Talbot, and five of the old centres dropped out, viz.: Consort, Erskine, Milnerton, Monitor and Sibbald.

The fairs were divided into two circuits, Mr. J. J. Loughlin having charge of the circuit north of Olds and Mr. G. R. Holeton the one south of Olds.

Owing to the drouth the fairs in the eastern part of the province suffered considerably and the following centres withdrew their fairs late in the season: Scollard, Youngstown, Chinook, Cereal and Oyen.

During April, May and June, most of the schools were visited when instruction and direction on School Fair work was given.

The boys and girls' stock judging competition, in connection with the School Fair at Olds, was an interesting and instructive feature of the fair.

The team from the Innis Lake School, consisting of Horace Notely, Chas. Radford and Kermit Rowell, were awarded the C. A. Weir cup. The next highest team was the Samis School District. The bronze medal went to Eddie Noad for the highest individual score.

The following was the total of schools and pupils taking part in the School Fairs:

	No. Schools	Pupils taking Seeds
Mr. Holeton's Circuit	167	3406
Mr. Loughlin's Circuit	145	2582
Totals	312	5988

BOYS AND GIRLS' SCHOLARSHIP SHORT COURSES

The course for the winning boys and girls from the Olds School Fair centres was held at Olds on July 21-26 inclusive, when 38 boys and 38 girls attended.

The course for the winners in the Vermilion, Sedgewick and Edmonton districts was held at Olds on July 7-12 inclusive. There were 40 boys and 41 girls who attended this course.

These short courses have proven to be one of the best means of arousing interest in Agricultural and Home Economics work

and incidentally in the Schools of Agriculture. Already quite a number of the young people who have attended these short courses have started their regular courses at the School of Agriculture. Altogether these courses afford a pleasant outing, introduction to a new type of instruction, and an insight into the possibilities of an agricultural education and its advantages to the farmer. The unanimous opinion of the young people attending these courses is that it is the most pleasant and instructive week that they have ever spent.

A few of the requirements for the short courses are that pupils must be 11 years of age or over; not more than one from any family may attend at one time and no pupil can attend more than one short course. One boy and one girl are chosen from each fair centre.

Pupils are put to no expense, as transportation, living expenses, etc., are all paid by the Government. The expenses per pupil amounted to approximately \$8.00. About half of this is expended for transportation, while the balance is for maintenance.

MEETINGS

In connection with the extension work from the Olds School of Agriculture, there is a continuous demand for speakers to address meetings held under the auspices of various organizations. Every week brings requests of this kind from one or more sources. In most cases the requests are complied with by sending some members of the school staff to give the address requested.

VACCINE

The O.S.A. keeps on hand for sale, at 15 cents per dose, Blackleg, germ-free, liquid vaccine. The sales of this vaccine are not heavy, but it is felt that since it is not available in many local communities, having it on hand at the school is a convenience for the stock growers.

THE SEASON OF 1924

The crop season of 1924 was one of many extremes. The early part of the season was cold and very dry. Following the dry cold weather experienced in May, June and until July 27th, were two severe hail storms, one on the last mentioned date, the second on August 2nd. Both of these storms were severe. The combined injury destroyed entirely all the crops on the demonstration farm. The second growth, which developed in the hay and oat fields, made very heavy yields of fair quality hay and silage, but owing to the short growing period between August 2nd, and the date of the first killing frost none of the second growth crops reached maturity. As a result no threshing on the farm at Olds was done in 1924. Even the root and potato crops failed to recover sufficiently to produce a decent crop. The precipitation records show a fairly heavy rain fall in the months of July and August. However, when it is observed that the greater part of

this rainfall was delivered in association with the hail storms it will be seen that it did the least possible amount of good, not being nearly as beneficial as it would have been had it come without hail, in small amounts spread over a wider period of time.

Meteorological records have been taken daily at the O.S.A. for the past ten years. Maximum and minimum temperatures, precipitation, evaporation, wind velocity, humidity and hours' sunshine are recorded.

DATES OF FIRST SEEDING AT OLDS, 1914 TO 1924

Years	Dates
1914	April 17th
1915	April 3rd
1916	
1917	May 5th (approximately)
1918	April 12th
1919	April 8th
1920	May 15th
1921	April 27th
1922	April 22nd
1923	April 13th
1924	May 3rd

PRECIPITATION RECORDS

Month	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	Monthly Average
January ..	0.49	0.75	0.60	1.16	0.75	2.05	0.60	1.35	0.65	0.70	0.81	
February ..	1.66	0.30	0.20	0.25	0.42	0.95	0.30	0.65	1.60	0.32	0.56	
March	0.85	0.60	1.00	0.15	0.05	1.95	1.46	0.25	0.35	1.10	0.77	
April	0.29	1.00	0.60	0.75	0.18	1.02	1.63	2.10	2.31	1.29	2.57	1.25
May	1.92	4.27	5.49	4.86	2.40	1.71	1.40	0.78	0.66	5.37	1.25	2.65
June	3.49	8.09	4.53	1.88	0.76	0.96	0.48	1.57	1.28	5.56	2.02	2.70
July	1.29	7.04	4.61	0.86	0.95	1.36	3.25	4.39	1.66	2.46	5.07	3.00
August	0.58	2.50	8.56	2.44	2.46	4.43	0.62	1.82	3.88	4.23	3.88	3.21
September ..	1.49	1.25	1.50	2.14	0.69	1.43	0.72	0.67	0.90	1.00	0.42	1.11
October	1.50	0.73	0.93	0.31	0.50	1.05	1.53	0.02	0.60	0.00	0.75	0.72
November ..	1.70	0.52	0.80	0.65	0.05	1.37	0.20	1.17	0.25	0.01	0.37	0.64
December ..	1.90	0.02	0.90	0.50	0.50	0.59	0.30	0.05	0.65	0.10	1.60	0.64
Total Estimate	13.16	27.42	29.57	16.19	9.60	15.14	15.07	14.93	13.44	22.61	20.11	18.06

SWINE WINTERED, 1924

Seven brood sows and a Yorkshire boar are being wintered at the O.S.A. this winter. Six of the sows are Yorkshires and one is a Berkshire. These are a group of very good individuals. Five of the Yorkshire sows are coming two years of age, while the other is three years old. The Berkshire sow is six years old. These sows each had two litters of pigs each year; the first litters were farrowed in the month of April and May whilst the second were born in October. The fall litters were at least six weeks too late for our conditions. Fall pigs should come in August or September so as to be fairly well grown before the cold weather sets in.

The sows on the farm are being wintered this winter in the open with "A" shaped cots for shelter. These cots are banked on the outside with snow and straw and are kept well filled with dry straw. They are being fed a ration of bran and oats and are given water containing a small amount of Potassium Iodine once each day. The sows are in what appears to be perfect condition. They are bred to farrow in April.

CATTLE

The shorthorn herd on the school farm is in excellent condition. It had a very successful year in 1924. The cows in the herd have bred regularly and there has been no trouble from abortion or any other disease. During the year three fairly good bulls were sold at the Calgary bull sale held in May. In addition two very good young bulls, Dale Cornerstone and Ramsden Cumberland, were sold to the University of Alberta, Edmonton, and the demonstration farm, Gleichen, respectively, for herd bulls. There are five very good bulls ready for the Calgary April bull sale. These are thick, smooth fellows that will do a great deal of good if used in the herds of the province.

There are now ten very good appearing calves from the new herd bull Princeton Benefactor. These calves are of good roan color, straight lined, deep, smooth and promise well.

STEER FEEDING EXPERIMENTAL WORK

During the winter of 1923-24, thirty steers, divided into five groups of six each, were used in an endeavor to compare the relative feeding values of sunflower and oat ensilage as succulent feed for steers, and the comparative values of cut oat straw and greenfeed as dry roughages.

The steers all had similar accommodation, being in equal sized pens with a continuous shed covering the east end of each pen. They were bedded liberally with oat and straw and no record of the oat and straw eaten was kept, all pens having equal access to it.

HORSES

No horse breeding has been done on the school farm for the past four years. This year, however, two of the best grade mares are in foal to a good Clydesdale horse, which is owned by Jos. Hagerty. There are sixteen head of horses on the farm at the present time. Three of the smaller horses are being fitted and will be sold this spring. The three good heavy draft horses shipped in from the Stony Plain Demonstration Farm, have very materially improved the appearance of our horses and make it possible to dispose of some of the tail enders.

The horses are given plenty of hard work and only ordinary care and feed. They are allowed to run on the stubble fields and around the straw stacks in the fall and winter months. In March they are stabled and gradually put on a heavy ration in preparation for the spring work. This method of wintering management has given better results than where the horses are closely stabled and heavily fed all winter.

CRATE FEEDING OF CHICKENS

A crate fattening experiment is carried out each year at the O.S.A. during the autumn term. This is done with a two-fold purpose, the primary object being to acquaint pupils in second year with the crate system of fattening poultry and preparing them for market. As well careful data on the results obtained with different feeds are recorded.

Respectfully submitted,

F. S. GRISDALE, .

Principal

Report on British Boys at the Vermilion School of Agriculture

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith a report covering the first six months' operation of the Vermilion School, under Honorable George Hoadley's scheme, for the immigration and training in agriculture of British youths.

We arrived in Vermilion on October 26th, and two days later, October 28th, the first contingent of 48 boys arrived. G. R. Gibson had arrived two weeks previously, so that we had 49 students in all. Arrangements were made to room and board the students in the main school building. This was soon accomplished and two days after their arrival the regular course of training began. The names of the 49 students, the address of their former homes, also age, are as follows:

Student	Former Home	Age
Allcock, F.	Manchester, England	28
Auton, J.	Sussex, England	25
Bayley, W.	London, England	18
Beaumont, W. J.	North Wales	26
Bell, A. G.	Edinburgh, Scotland	19
Bissett, L. R.	Mother in Vermilion	25
Brooks-Bailey, F.	Herts, England	17
Chaloner, J.	Manchester, England	23
Chapman, E.	Teddington, Middlesex England	20
Colson, E.	London, England	19
Crabtree, A.	Doncaster, England	21
Creese, F.	Southport, England	21
Dawes, P.	Birmingham, England	21
Dunn, F.	Lincoln, England	16
DuSautoy, Wm.	Southampton, England	17
Eyre, O.	Derby, England	22
Gibson, G. R.	Hurst Towers, Biddulph England	21
Gibson, J.	Liverpool, England	22
Grundy, W.	Knutsford, Cheshire England	22
Hastings, A.	East Lothian, Scotland	17
Housez, J.	Bristol, England	18
Manley, E.	Worthing, Sussex, England	20
Marsh, R.	Esplande, Isle of Wight	19
Midgley, T.	Bolton, England	18
Miller, A. C.	Huddersfield, Yorks., England	20
Moodie, R.	Oldridge, England	17
Mould, A.	London, England	20
McCulloch, A.	Bo'ness, Scotland	21
McDouall, A.	London, England	18
Owen-Jones, A.	Manchester, England	22
Pearl, J.	Starford Bridge, Worcester England	24
Phair, Wm.	Skibberreen, County Cork Ireland	16
Ransom, A.	Mother in Vermilion	18

Seaby, P.	Reading, Berks. England	17
Shaw, A.	Accrington, England	22
Sheret, R.	London, England	23
Simpson, Geo.	Montrose, Scotland	24
Skeats, J.	Thornton Heath, Surrey, England.....	19
Strathern, J. A. ....	.....	24
Waddell, W.	Dromore, County Down, North Ireland....	24
Wells, W.	Leicester, England	23
Woffindin, H.	Great Gonerby, Grantham	17

On November 5th, D. Shiel arrived, but under doctor's certificate he was not advised to continue the course, and with his father's consent he went to the Coast. The father's address is: Col. Shiel, "Cromer," Vincent Ave., Shirley, Southampton.

On November 20th, seven more students arrived. Their names and ages are as follows:

Bedford, E. W.	Southend-on-Sea, Essex England	26
Counsell, F. F.	Blackburn, Lanc. England	26
Curry, R. R. D.	Bombay, India	18
Gordon, A. S.	Ardlin, Scotland	20
Hudson, D. W.	Bradford-on-Avon, Wilts. England.....	19
Moffatt, J. F.	Liverpool, England	24
Skinner, J. C.	Markshall, Norwich, England	18

On December 5th, six more students arrived. Particulars for them are as follows:

Brown, D. S.	London, England	24
Gordon, S. J.	Queen's Park, Chester, England	20
Cunnington, F. C.	London, England	21
Lear, K. F.	London, England	18
Pole, A. A.	Bristol, England	18
O'Brien, Smith.....	London, England	21

On January 2nd, one more student arrived, whose name is B. G. Cook, Harrogate, Yorks. Thus the total students enrolled are as follows:

Arrived October 15th	1
Arrived October 28th	48
Arrived November 5th	1
Arrived November 20th	7
Arrived December 5th	6
Arrived January 2nd	1
	64
Went to Coast on doctor's orders.....	1
Unable to continue course.....	3
Removed by death.....	1
	5.
Enrolment at end of February.....	
	59

The boys are older than was expected, ranging in age from 16 to 28, with perhaps an average of 20 to 21 years. They are well educated, refined and gentlemanly, thoroughly honorable, and of splendid character.

Some had had experience on a farm in the old country, while the majority had no experience, but the thing that has impressed every member of the staff is the spirit with which they do all kinds of work, their endeavor to do their best and willingness to take advice. It is to be expected that some will gain experience much more rapidly than do others, and while the great majority have progressed very favorably with their training, there are, of course, a few who seem as though they are not suited to the work.

The course comprises five months spent at the School of Agriculture, to be followed by seven months or more on an Alberta farm as a hired man.



HOADLEY BOYS AT VERMILION

This is the first party of British youths to be trained at the Vermilion School of Agriculture in Alberta, under the scheme developed by Hon. Geo. Hoadley, Minister of Agriculture.

The Vermilion Farm is well stocked with horses, cattle, (including a dairy herd of 30 cows), sheep and hogs. The students are divided into two groups, the one doing the regular farm work and the other taking such work as stock judging, grain and weed seed identification, gas engine work, carpentry and blacksmithing. The groups alternate in the work so that all receive the same training. The farm group is called at 6:30 and are in the barns at 7 o'clock to clean out the barns, feed, brush and harness the horses, and milk the 30 cows in the herd. For the balance of the day the boys haul out the manure, draw hay and bedding, feed the hogs and sheep and do the regular work on a well stocked 320-acre farm.

The course as given is very different from that at the two other Schools of Agriculture, in that most of these boys are high school graduates, and some have a year or more at Oxford or Cambridge, so that English and the sciences are not given, but all the time

possible is put into the practical work with the teams and other stocks. One thing can be said of the course and that is that every boy will be able to milk from 1 to 4 cows and many of them will make real useful hands on a dairy farm and will be able to harness, hitch up and drive a team in a fairly creditable manner. In fact quite a number of the boys have developed into good teamsters.

As evidence of the training being given we would like to cite particularly the case of Mr. Hallman, who came from Oyen, where he is recognized as one of the best dry land farmers in the Province of Alberta. Mr. Hallman came to Vermilion prejudiced against the scheme and critical of those who launched it. After seeing the character of the work being done on the farm, and the type of boy who was in training, he has selected one to take charge of his 12-horse outfit, and has written to five of his neighbors who are each taking a boy on Mr. Hallman's recommendation.

The permanent staff consists of five men who also have charge of the operation of the demonstration farm.

W. J. Elliott	—Principal.
B. J. Whitbread	—Agronomist and in charge of all teaming.
J. G. Clark	—Teaches the boys to milk and gives driving instruction.
G. H. Geary	—Carpenter.
F. H. Newcombe	—Stock judging, feeding, and management.

During the winter special instruction is given by the following:

Dr. P. Talbot	—Veterinary.
A. W. Foley	—Poultry.
E. C. Hallman	—Farm Management.
H. S. Pearson	—Butter and Cheese making.
W. J. Stephen	—Field Crops.

We wish also to acknowledge a course of lectures by Mayor of Vermilion, dealing with contracts, Dominion and provincial land laws, government, etc., etc. The students have appreciated these lectures very much.

Many of the students brought to Canada clothing and equipment that was entirely unsuitable. This was particularly true with regard to the extremely heavy shoes that were brought. The moc-casins and felt shoes purchased in Vermilion were found to be much more suitable. In addition to this most of the students brought out a great many clothes that were of very little use to them. More attention should be given to the clothing equipment the boys bring out with them another year.

It is but natural that we should find some things that possibly might have been better another way, for as far as we can find out, this plan has never been tried out before in any country, and consequently we have had to shape things very largely as we progressed. We wish to acknowledge the very great assistance

rendered by the staff, the visiting instructors, and the officials of the Department of Agriculture, for it is the combined effort of all that has made possible what may have been accomplished during the first year.

To Mayor Morrison, of Vermilion, for his practical legal talks, and to W. J. Beaumont, President of the students' organization, together with his committee, we wish to convey our thanks for the assistance rendered.

Respectfully submitted,

W. J. ELLIOTT,

Principal.

Report of the School of Agriculture Raymond

H. A. CRAIG,

Deputy Minister of Agriculture.

SIR,—

I have the honour to submit herewith the Report for the School of Agriculture at Raymond, Alberta, for the year 1924.

While the school has not been in operation for over two years, the buildings and equipment are being cared for, to prevent undue deterioration and loss. The school grounds have been maintained, and some improvements made by the planting of trees and shrubs during the past summer.

As a measure of economy, all irrigation experiments were abandoned during the past summer. The land formerly used for experimental purposes has been turned over to the farm and will be used for farm purposes next year.

The farm upon which the school is located consists of 290 acres, most of which is irrigable. The size of the farm is about to be reduced as the result of a portion of the farm, about fifty acres, being granted to the Utah-Idaho Sugar Company for a factory site.

Since the farm was established gradual development has been taking place from year to year; weeds have been eradicated, fields fenced, permanent hay and pasture crops have been established, and a definite rotation of crops is to be established.

During the past year crop yields were very satisfactory. Approximately 4,000 bushels of grain, 150 tons of alfalfa hay, and 150 tons of silage were produced from 160 crop acres of land. In addition very satisfactory yields were obtained from the pasture crops. An area of approximately twenty acres was prepared for the growing of sugar beets in 1925.

At present the farm is carrying 153 head of live stock, consisting of 52 cattle, 11 horses, 42 sheep and 48 hogs.

For the past three years steer feeding tests have been conducted on the farm, using feeds produced thereon. Complete records covering this work have been submitted to the farm director.

Irrigation farming is particularly adapted to intensive methods. With this in mind a small herd of Jersey cows have been placed on the farm, most of these are producing and cream is being sold regularly to the Lethbridge dairies.

During the year the writer's time has been devoted to the supervision of the farm, attending short courses and institute meeting and similar extension work, particularly in connection with the establishment of the beet sugar industry in Southern Alberta.

Respectfully submitted,

O. S. LONGMAN,

Principal.

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